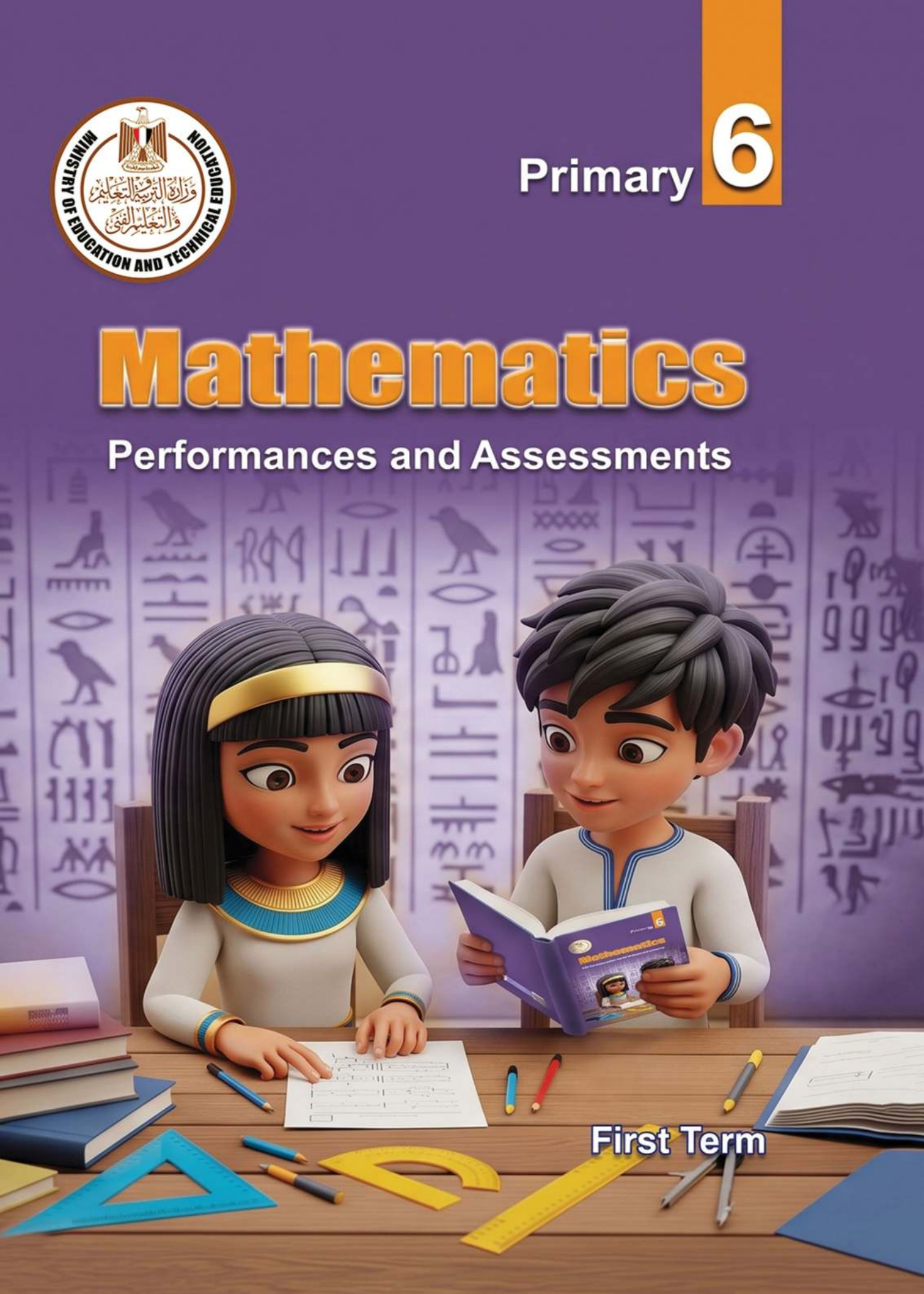
MINISTRY OF EDUCATION AND TECHNICAL EDUCATION

وزارة التربية والتعليم والتعليم الفني

Primary 6

Mathematics

Performances and Assessments



First Term

1 First Unit

First Lesson: **Divisibility** Week .....

Date: / /

Classroom Performance:

Activity (1) Play with cards

Cooperate with your partner using the following cards to find:

- Even numbers
- Odd numbers
- Numbers divisible by 2

87	25	66	24	53
42	111	60	48	49

.....
.....

Activity (2) Share your partner in completing the following table

Number	divisible by 2	Divisible by 3	Divisible by 4	Divisible by 5	Divisible by 6	Divisible by 10
48	√	√	√		√	
50						
46						
75						
120						

.....
.....

Homework:

Answer the following questions:

1) Is the number 24 divisible by 2? And why?
2) Is the number 15 divisible by 5? And why?
3) Write five numbers divisible by 10.
4) Write a number that is divisible by 2, 3, and 10.
5) Write a number that is divisible by 2, 5, and 10.

Second lesson: **Prime Factorization** Week .....

Date: / /

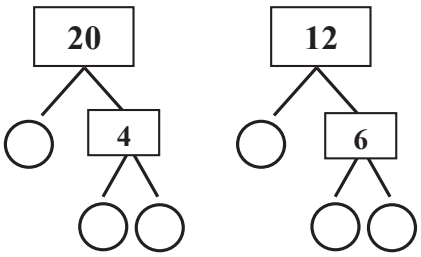
Classroom Performance:

Activity (1) Factors Tree

Share your partner using the factor tree to find the prime factors of 12 and 20:

1) The prime factors of 12 are .....

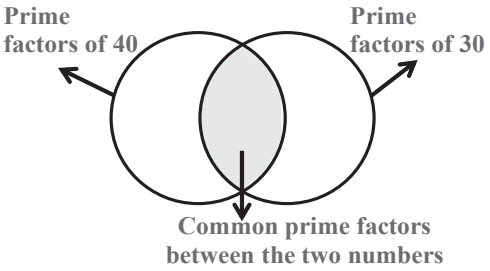
2) The prime factors of 20 are .....



Activity (2) Venn Diagram

Complete the Venn diagram to find GCF and LCM for 30 and 40. Share with your partner:

- The prime factors of 40 are .....
- The prime factors of 30 are .....
- GCF = ...
- LCM = ...



Activity (3) Play with Cards

In collaboration with your groupmates, match each card to its appropriate item:



9 , 6	12 , 8
G.C.F. = 4	L.C.M. = 24
L.C.M. = 18	G.C.F. = 3

Homework:



Answer the following questions:

1) Find the prime factors of 25 and 45.
2) Find the prime factors of 12 and 30.
3) Find the prime factors of 7 and 14.
4) Find the prime factors of 3 and 15.
5) Find two relativly prime such that their product is 36.

Weekly Assessment (Week……...)

(Model A)

First: Choose the correct answer from the given answersg:

1) The number ..... is divisible by both 3 and 6

(A) 33 (B) 21 (C) 12 (D) 9

Second: Answer the following questions:

1) Find GCF of the numbers 9 and 12

……

2) Find the prime factors of the numbers 10 and 15

……

3) Find LCM of the numbers 10 and 12

……

4) Find the numbers divisible by 4 that are between 10 and 50

……

(Model B)

First: Choose the correct answer from the given answers:

1) The number ..... is divisible by both 2 and 5.

(A) 51 (B) 10 (C) 21 (D) 12

Second: Answer the following questions:

1) Find GCF for the numbers 7 and 28

……

2) Find the prime factors of the numbers 35 and 60

……

3) Find the LCM for the numbers 18 and 14

……

4) Find the numbers divisible by 6 that are between 30 and 65

……

(Model C)

First: Choose the correct answer from the given answers:

1) The number ..... is divisible by both 3 and 5

(A) 5 1 (B) 10 (C) 21 (D) 12

Second: Answer the following questions:

1) Find GCF for the numbers 15 and 35

……

2) Find the prime factors of the numbers 25 and 15

……

3) Find the LCM of the numbers 8 and 24

……

4) Find the numbers divisible by 3 that are between 5 and 25

……

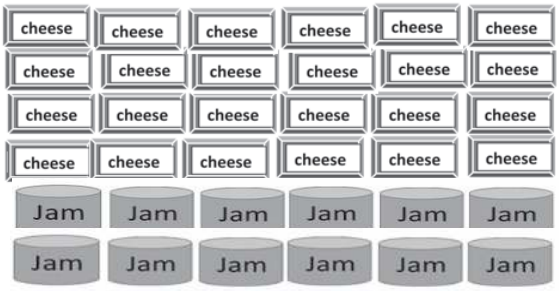
Third lesson: **Writing numerical expressions using GCF** Week .....

Date: / /

Classroom Performance:

Activity (1) Charity Work

In front of you are 24 packs of cheese and 12 cans of jam.
Cooperate with your partner to distribute them into donation boxes,
so that each donation box contains the same number of packs of cheese and the same number of cans of jam, to be distributed to the needy. Then write:



1) The largest possible number of donation boxes that can be used.

.....

2) The numerical expression for the total number of packs of cheese and cans of jam in the donation boxes.

.....

Activity (2) Think

Complete using GCF for the two numbers, as in the example.

Example: 10 + 15 = 5 (2 + 3), where the GCF for the numbers 10 and 15 is 5

1)18 + 36 = …… (……..... + ……..)

2) 16 + 28 = …… (……..... + ……..)

Homework:

Answer the following questions:

1) Use the distributive property, GCF to find the resulte of: 25 + 20
2) Use the distributive property to find the product of: 6 (2 + 7)
3) Use the distributive property to find the product of: 7 (3 + 5)
4) A charity collected 48 kg of meat and 30 kg of potatoes in a donation campaign for a food banks. What is the largest possible number of boxes that can be used so that each box contains the same number of kilograms of meat and the same number of kilograms of potatoes?
5) A student collected 21 bags of sugar and 28 bags of rice to prepare donation boxes for those in need. What is the method for distributing them among the boxes? so that each box contains the same number of sugar bags and rice?

Fourth lesson: **Least Common Multiple Analysis** Week .....

Date: / /

Classroom Performance:

Activity (1) Share your Partner

In front of you a box contains 24 pieces of chocolate. You want to give your partner a third of the box. Cooperate with your partner to find:

a) The fraction that represents the number of pieces of chocolate you should give your partner

.....

b) The numerical expression that represents your giving your partner a third of the box of chocolate pieces



.....

c) The regular fraction that represents the remaining pieces of the box

.....

Activity (2) Match and Solve

Working with your group members, match from column (a) what fits in column (b)

	(a)		(b)
①	$\frac{3}{7} + \frac{4}{7} =$	●	$\frac{7}{18}$
②	$\frac{5}{9} - \frac{3}{18} =$	●	1
③	$\frac{3}{16} + \frac{1}{4} =$	●	$\frac{5}{13}$
④	$\frac{8}{13} - \frac{3}{13} =$	●	$\frac{7}{16}$
		●	7

Homework:

Answer the following questions:

1) Find LCM of the denominators of the fractions $\frac{1}{4}$ and $\frac{3}{8}$

.....

2) Find: $\frac{3}{4} + \frac{1}{3}$

.....

3) A family ate $2\frac{1}{2}$ kilograms of apples at one day and $2\frac{2}{4}$ kilograms at the next day. How many kilograms did they eat in both days?

.....

4) What is the lowest common denominator of the fractions $\frac{5}{8}$ and $\frac{5}{6}$?

.....

5) Your friends, Mohammed and Omar, have two identical packs of biscuits. If Mohammed eat $\frac{3}{12}$ a packs, and Omar eat $\frac{1}{3}$ of the other pack, find the remainder of the two packs together?

.....

Weekly Assessment (Week……...)

(Model A)

First: Choose the correct answer from the given answers:

1) $\frac{2}{5} - \frac{4}{15} =$ …… (A) $\frac{3}{15}$ (B) $\frac{3}{5}$ (C) $\frac{6}{15}$ (D) $\frac{6}{5}$

Second: Answer the following questions:

1) Find GCF of the numbers 4 and 8

……

2) Find LCM of the denominators of the fractions $\frac{1}{3}$ and $\frac{3}{21}$

……

3) Ahmed bought 28 apples and 35 oranges and wants to put them on plates. What is the largest number of plates that can be used to hold the same number of oranges and the same number of apples?

……

4) Use the distributive property to find: 12 + 36

……

(Model B)

First: Choose the correct answer from the given answers:

1) $\frac{2}{3} - \frac{4}{12} =$ …….. (A) $\frac{4}{12}$ (B) $\frac{8}{12}$ (C) $\frac{10}{12}$ (D) $\frac{1}{3}$

Second: Answer the following questions:

1) Find GCF of the numbers 6 and 9

……

2) Find the GCF of the denominators of the fractions $\frac{1}{3}$ and $\frac{3}{16}$

……

3) Maha bought 32 cans of tuna and 40 cans of milk and wants to put them in bags. What is the largest possible number of bags that can be used to contain the same number of cans of tuna and the same number of cartons of milk?

……

4) Use the distributive property to find the result: 18 + 24

……

(Model C)

First: Choose the correct answer from the given answers:

1) $\frac{3}{4} - \frac{7}{24} =$ …… (a) $\frac{4}{4}$ (b) $\frac{4}{24}$ (c) $\frac{2}{4}$ (d) $\frac{11}{24}$

Second: Answer the following questions:

2) Find GCF for the numbers 5 and 10

……

3) Find the LCM for the denominators of the fractions $\frac{1}{6}$ and $\frac{3}{18}$

……

4) Reham bought 45 pieces of chocolate and 15 pieces of cookies and wants to distribute them among a group of friends. What is the largest possible number of friends that can be given to each person so that they each take the same number of pieces of chocolate and the same number of cookies?

.....

5) Use the distributive property to find : 42 + 28

.....

2 Second Unit

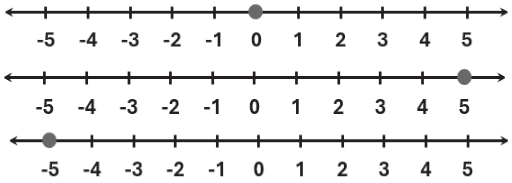
First Lesson: **Using a Number line to Describe Data** **Week .....**

Date: / /

Classroom Performance:

Activity (1) "A Trip on the numbre line: determine the number line that represents the situation"

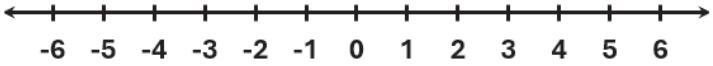
Join each situation with its siutable number line
a) Ziad received 5 pounds as a reward.
b) The temperature in Moscow is 5 degrees below zero.
c) An integre is non-negative and non-positive.



Activity (2) "A Trip on the numbre line: Discover locations on the number-line"

The position of a group of runners is determined relative to the knowon midpoint from the starting point of the marathon in meters. As in the following table, represent these distanses on the following number-line:

Competitor Number	1	2	3	4	5	6	7
Position to the point	6	– 1	0	– 4	2	– 6	3



Homework:

Answer the following questions:

1) What is the integer that represents a whale diving to a depth of 22 meters below sea level?
2) What is the integer that represents Ahmed's profit of 3,000 pounds in his business?
3) A number that does not express an increase or a decrease, what is it?
4) Write a situation represents the integer 9, and another represents the integer – 9.
5) Draw a number line and then determine the integers 7 , – 2 , 0 , – 3 , 4 on it.

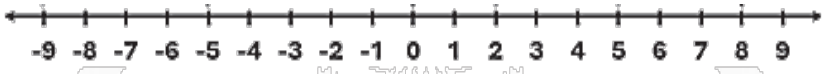
Second lesson: Using a Number line and Symbols to Compare Numbers **Week .....**

Date: / /

Classroom Performance:

Activity (1) "The palance, Opposite numbres"

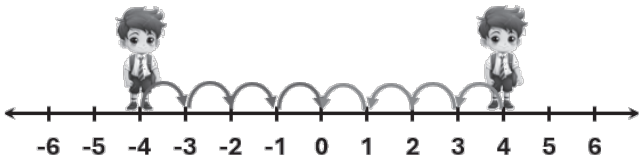
The number line shows the position of some points relative to zero on the right and left. Observe and then place the additive inverse of each of them so that they are balanced around zero on the number-line:



Activity (2) "The palance, Opposite numbres"

Write the smpole > or < to get a correct staement:

a) – 9 ……. – 5
b) – 5 ……. 0
c) 5 ……. 4
d) 3 ……. – 3
e) 0 ……. 8
f) – 8 ……. 7



Homework:

Answer the following questions:

1) Which is greater – 15 or – 1 ?
2) What is the largest negative integer? What is the smallest positive integer?
3) What number represents the balance point for the opposite numbers on the number-line?
4) Put a check mark > or < in each of the following:
   – 15 ……. 10 , 19 ……. – 20 , – 11 ……. 0
5) Write the additive inverse of each of the following numbers:
   8 , – 3 , 0 , – 20 , 15

Weekly Assessment (Week……...)

(Model A)

First: Choose the correct answer from the given answers:

1) The number that represents the place point of opposite numbers on the number line is ……..

(a) – 1 (b) 1 (c) 0 (d) 10

Second: Answer the following questions:

1) What is the Largest negative integer ?

……

2) Which is greater: – 9 or – 20 ?

……

3) What is the integer that lies directly to the left of the number – 7 ?

……

4) What is the integer that expresses the temperature of a liquid at two degrees below zero ?

……

(Model B)

First: Choose the correct answer from the given answers:

1) The smallest positive integer is ……..

(a) 0 (b) – 1 (c) 1 (d) 2

Second: Answer the following questions :

2) What is the additive inverse of the number 5 ?

……

3) Which is smaller: 0 or – 32 ?

……

4) What is the integer that lies directly to the right of the number – 5 ?

……

5) What is the integer that expresses Adel's loss of 3,000 pounds in his business?

……

(Model C)

First: Choose the correct answer from the given answers:

1) …….. is neither positive nor negative integer.

(a) zero (b) 1 (c) – 1 (d) 100

Second: Answer the following questions :

1) What is the additive inverse of the number 7 ?

……

2) Which is greater: 3 or – 7 ?

……

3) What is the integer that lies directly to the right of the number – 11 ?

……

4) What is the integer that expresses the three floors of a tower underground?

……

Third Lesson: **Analyzing Rational Numbers by Using Models** **Week .....**

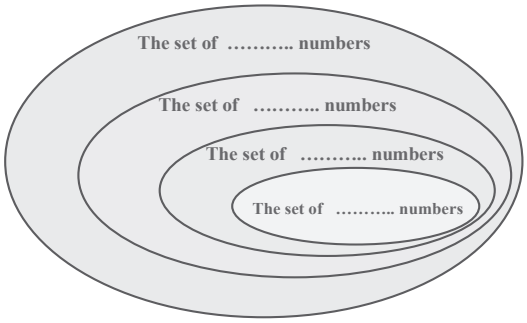
Date: / /

Classroom Performance:

Activity (1) "A trip inside venn diagram: Where dose the number belong"

In the opposite venn diagram, complete the name the sets of numbers, then place the following numbers in the appropriate subset inside the diagram, then complete:

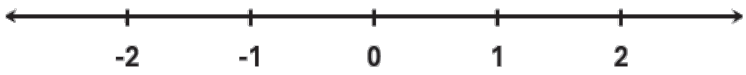
0.25 , 5 , 0 , -12 , $-\frac{3}{4}$, -1.5 , $\frac{1}{2}$



Activity (2) "A trip across the number-line"

Detremine the following rational numbers on the opposite number-line:

-0.5 , 1.25 , -1.5 , $\frac{3}{4}$, 2



.....

.....

Homework:

Answer the following questions:

1) Mintion the sets of numbers which are subsets from the set of rational numbers.
2) Mintion a number that belongs to the natural numbers and another number that does not belong to it.
3) Write down which number belongs or does not belong:
   a) -12 ..... to the set of counting numbers
   b) 0.25 ..... to the set of rational numbers.
4) Wrirte the following rational numbers in the form $\frac{a}{b}$ (in simplest form):
   -1.5 , -5 , 0.2
5) Identify the following rational numbers on the number-line:
   0.5 , -2.5 , $-1\frac{1}{4}$, 3.5

Fourth Lesson: **Comparing and Ordering Rational Numbers** Week .....

Date: / /

Classroom Performance:

Activity (1) "The Comparison Challenge: From the Largest to the smallest"

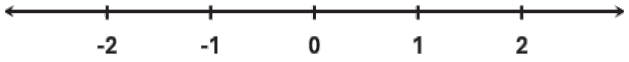
Compare the following rational numbers by putting the sign > , < or = :

a) 0.5 …….. – 2.5 b) $-\frac{3}{4}$ …….. 0.7

c) – 0.3 …….. – 2.4 d) $1\frac{4}{5}$ …….. $2\frac{1}{2}$

Activity (2) "The Race: From the Smallest to the Largest

Order the following rational numbers ascendingly using a number-line:

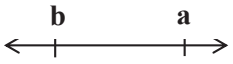


$1\frac{1}{2}$, $-\frac{1}{4}$, 0.4 , – 1.5 , 2

The start ..... , ... , ... , ... , ...

Homework:

Answer the following questions:



1) Which of the following is the greater a or b?

2) Compare the two rational numbers $1\frac{1}{2}$, $1\frac{5}{10}$

3) Compare the two rational numbers: $-\frac{7}{8}$, $-\frac{3}{8}$

4) Order the following numbers from smallest to the largest:

1 , - 1.5 , 0.6 , $-\frac{1}{4}$, $2\frac{1}{2}$

5) Write a rtional number lies between 1.34 , 1.35 using a number-line.

Weekly Assessment (Week……...)

(Model A)

First: Choose the correct answer from the given answers:

1) The number …….. belongs to the set of Integers.

(a) $-\frac{1}{4}$ (b) – 4 (c) 0.5 (d) $-1\frac{1}{2}$

Second: Answer the following questions:

1) Write the number 3.28 in the fractional form.

……

2) Write the Rational number 0.75 in the form of a fraction $\frac{a}{b}$.

……

3) Write a Rational number that lies between 2.1 , 2.2 using the number-line.

……

4) Arrange the following numbers in an ascending order:

1 , 0 , - 2.9 , - 0. 8 , 1.8

……

(Model B)

First: Choose the correct answer from the given answers :

1) The number …….. belongs to the set of Natural numbers.

(a) 2.25 (b) – 5 (c) 0 (d) $-1\frac{1}{2}$

Second: Answer the following questions:

1) Write the rational number 3.25 in a mixed number form.

……

2) Write the Rational number 0.25 in the form of a proper fraction $\frac{a}{b}$.

……

3) Write a Rational number that lies between $\frac{1}{8}$, $\frac{2}{8}$ using the number-line.

……

4) Arrange the following numbers in an ascending order:

3.4 , - 3.4 , 2.28 , - 0.5

……

(Model C)

First: Choose the correct answer from the given answers:

1) The number …….. belongs to the set of Counting numbers.

(a) 0 (b) $\frac{1}{2}$ (c) 4 (d) -1

Second: Answer the following questions:

1) Write the rational number 3.26 in a mixed number form.

……

2) Write the Rational number 0.50 in the form of a proper fraction $\frac{a}{b}$.

……

3) Write a Rational number that lies between 0.15 , 0.16 using the number-line.

……

4) Arrange the following numbers in an ascending order:

3.4 , 3.5 , 2.8 , - 2.3

……

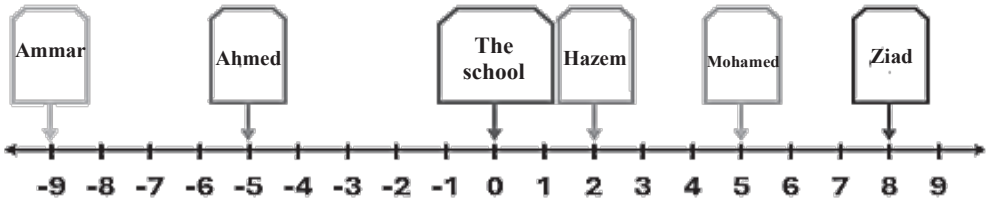
Fifth Lesson: **Exploring Absolute Value** Week .....

Date: / /

Classroom Performance:

Activity (1) "A trip to School: My Home Location Compared to the School"

The number line shows the position of each student's home in relation to the school, left and right. Observe and complete:



- Students whose home locations are represented by positive numbers are …….
- Students whose home locations are represented by negative numbers are …….
- The closest student to the school is ……. , While the furthest student from the school is …….
- ……. and ……. students are at the same distance from the school.

Activity (2) "Stop at Absolute Value"

Share your partners to create a large number line using a cardbord. Then, draw a card from cards numbered from - 20 to 20. Shuffle the cards and place them face down. Then, stand on the number line at the number drawn and determine its absolute value (example: if -15 is drawn its absolute value is 15, if -12 is drawn its absolute value is 12), then they exchanged roles.

……

Homework:

Answer the following questions:

1) Write the absolute value of the following numbers: - 55 , 14 , - 25 , - 19
2) If $|-22| = a$, then what is the value of a?
3) Write the absolute value of the following numbers: - 3 , 1 , - 1 , 25
4) Find the value of x if: $|x| = 9$
5) A submarine is located 15 meters below sea level, and a fish is located 10 meters below sea level at the same time, which is closer to sea level?

Sixth Lesson: **Comparing Absolute Values** Week .....

Date: / /

Classroom Performance:

Activity (1) "Comparing Absolute Values"

Notice the cards in front of you and arrange them ascendingly:

- 2	15	| - 6 |	0	- 6	| - 16 |

The order: …….. , …….. , …….. , …….. , …….. , ……..

Activity (2) "Absolute Value Competition"

You and your partner shuffle the following number cards face down in one pile. Then, each student draws one card and at the same time determine the absolute value of the numbers drawn. The student with the larger absolute value wins both cards and places them in his winning pile. If the absolute values are equal (for example, one student draws | - 7 | and the other draws 7), then the students are draw up.

$\frac{5}{2}$	$\lvert -2\frac{1}{2} \rvert$	1.5	$-\frac{3}{4}$	$\lvert -8 \rvert$	$\lvert -4 \rvert$	$\lvert \frac{1}{6} \rvert$	$\lvert -7.3 \rvert$

Activity (3) "Correct Choice"

You have a set of symbol cards in front of you. Share with your group partners in choosing the appropriate card to make the mathematical sentence correct.

<	>	=

$|3| \square |-3|$ $\quad$ $|-8| \square 6$

$|-12| \square 12$ $\quad$ $|-7.3| \square 3.7$

$-|-4| \square |4.8|$ $\quad$ $-|5| \square 0$

Homework:

Answer the following questions:

1) What is the additive integer of the number | - 7 | ?
2) Write a number smaller than | - 18 |
3) Arrange descendingly: 6 , - 8 , | - 7 | , | - 9 | , 0 , | - 5 |
4) Write two negative numbers whose absolute values is greater than the number 18.
5) There are two rational numbers: - 5.7 and - 5.77 , what is the greater number?

Weekly Assessment (Week……...)

(Model A)

First: Choose the correct answer from the given answers:

1) | - 4 | < ……..

(a) 4 (b) – 4 (c) 5 (d) – 5

Second: Answer the following questions:

1) Find: | 8 | + | - 9 |

……

2) Write the absolute value of the following numbers: - 99 , 13 , - 19 , 45

……

3) Find the value of x if: | x | = 24

……

4) Arrange the following numbers in an ascending order:

| - 2.6 | , 0 , - 4.3 , 2.25 , - 2.6

……

(Model B)

First: Choose the correct answer from the given answers:

1) …….. < | - 2 |

(a) 2 (b) – 2 (c) 4 (d) 5

Second: Answer the following questions:

1) Write two negative numbers the absolute value of each is greater than 2.

……

2) Find the value of x if: | x | = 5

……

3) Arrange the following numbers in an descending order:

5 , - 5 , | - 11 | , | 7 | , 0 , - | 11 |

……

4) Find the additive inverse of the number | - 5 |

……

(Model C)

First: Choose the correct answer from the given answers:

1) | - 3 | < ……..

(a) – 3 (b) 3 (c) $\frac{1}{3}$ (d) 6

Second: Answer the following questions:

1) Find | 2 | + | - 3 |

……

2) Write two negative numbers the absolute value of each is greater than 6.

……

3) Find the value of x if: x = | - 46 |

……

4) Arrange the following numbers in an ascending order:

| - 41 | , - 4.2 , 0 , | - 42 | , 40 , - 40

……

3 Third Unit

First Lesson: **Creating Mathematical Expressions** Week .....

Date: / /

Classroom Performance:

Activity (1) "I think at"

Share your partner to write a situation that expresses the following sentences, and starts by "*I think at ……*.":
"a number addead to it 5" , "the difference between a number and 7"
"a number multiplied by 2 then subtracted 1 from the result" , "the sum of two numbers divided by 4"

……
……

Activity (2) "I think at"

Share your partners in your group to write the algebraic expressions that expresses:
"In a car race, a car covered a distance t kilometers in the first stage and covered a distant decreased by 5 kilometers in the second stage. Write an expression that expresses the distance you covered in the second stage".

……
……

Homework:

Answer the following questions:

1) Determine which of the following represents an algebraic expression and which represents a numerical expression:
   $8 + s + 2x$, $3 + 55$, $5b - 2c$, $6(3 + 4)$
2) Determine which of the following represents an algebraic expression and which represents a numerical expression:
   $2z$, $4 \times (2 + 75)$, $5x + 7$, $8 - 0.234$, $3y + 3$
3) Dalia wanted to divide some pounds among 6 children equally. Write an algebraic expression expresses Dalia's situation.
4) Dalia has x pounds. she spent 30 pounds. Write an algebraic expression expresses Dalia's situation.
5) Aadam saves 250 pounds each a weak. Write an algebraic expression expresses the money that Aadam saves during x weaks.

Second Lesson: **Analyzing Mathematical Expressions** Week .....

Date: / /

Classroom Performance:

Activity (1) "Identical cards"

Discribe the mathematical expressions into two different sets. Name each group:

$5x + 2y + 3$	$2(9) + 3$	$r + s - 25$	$8.7 + 2$

Activity (2) "Notice and analyze"

Sahare your partner to analyze the algebraic expresions to complete the following table:

algebraic expresion	Number of terms	Like terms	Constants	Coefficients
$2y + 6m$				
$5 + n$				
$6z + 2z + 9$				

Activity (3) "Estemation game"

In front of you a set of algebraic expression cards. Choose a card, then describe the mathematical expression after analyzing. Your firends try to Estemate it:

$y + 9$	$2n + 4$	$5z$	$5n + 7$

Homework:

Answer the following questions:

1) Identify the constant and the variable in the algebraic expression $4y + 5$
2) Write the coefficients in the algebraic expression $m + 41 + 3n - 6$
3) Identify the number of terms in each of the following algebraic expressions:
   a) $4n + 2n - 20$ b) $3x + 16$ c) $2x + 2$
4) Identify the like terms in each of the following algebraic expressions:
   a) $4n + 2n - 20$ b) $3x + 16$ c) $2x + 2$
5) Write an algebraic expression consisting of 3 terms with two like terms.

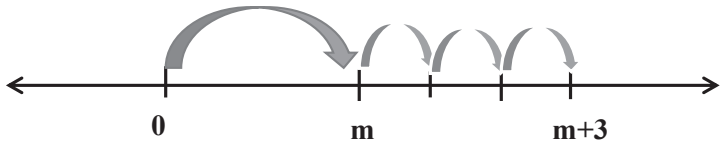
Third Lesson: **Analyzing Mathematical Expressions** Week .....

Date: / /

Classroom Performance:

Activity (1) "Who am I?"

Choose the mathematical expression represents the following number line:



Activity (2) "Algebraic Expression Puzzles"

Share your partner to write the algebraic expressions for the following puzzles:

- I am a number you multiply me by 4 and add 7 to the result
- My age now is y years , what is my age after 5 years?
- I have x pens, and I gave my sister 3 pens. How many pens left?

Homework:

Answer the following questions:

1) Write an algebraic expression that expresses the verbal form:
   The sum of m and 23
2) Write an algebraic expression for the verbal form:
   The product of y and 12 and dividing the product by 4.
3) Write a verbal form that expresses the algebraic expression: 3 d
4) Write a verbal form that expresses the algebraic expression: 2 x + 1
5) Mona bought y of pieces of chocolate. She ate 5 pieces of it and divided the rest among 3 of her friends. Write the algebraic expression that expresses the number pieces of chocolate shared to each of her friends.

First Month Exercises

First: Choose the correct answer from the given answers:

1) The number 507 is divisible by …….. (without remainder)
(a) 2 (b) 5 (c) 3 (d) 10

2) (196 + ……..) is divisible by 10
(a) 1 (b) 2 (c) 3 (d) 4

3) The number …….. is divisible by 5
(a) 735 (b) 573 (c) 357 (d) 63 537

4) The numbers 5 , 8 are called …….. numbers.
(a) odd (b) even (c) relatively prime (d) not prime

5) (…….. + 3) × 3 = 15 + 9
(a) 5 (b) 24 (c) 15 (d) 2

6) $\frac{6}{8} - \frac{1}{2} =$ ……..
(a) $\frac{1}{8}$ (b) $\frac{5}{8}$ (c) $\frac{5}{6}$ (d) $\frac{1}{4}$

7) The number …….. is neither negative nor positive.
(a) 1 (b) – 2 (c) 3 (d) 0

8) The height of a city of 15 meters above sea level is represented by the number ……..
(a) 15 (b) – 15 (c) 0 (d) 13

9) Two opposite numbers. one of them is – 9, the other number is ……..
(a) – 9 (b) 9 (c) 18 (d) 0

10) – 9 < ……..
(a) – 10 (b) – 15 (b) – 5 (c) – 12

11) The number …….. belongs to the set if integers.
(a) – 0.5 (b) $\frac{1}{3}$ (b) – 9 (c) 1.7

12) The set of integers ……. the set of rational numbers
(a) Belongs to (b) Does not belong (b) is subset of (c) is not subset of

13) 0.6 < …….. < 0.7
(a) 0.72 (b) 0.56 (c) 0.65 (d) 0.357

14) | - 6 | = ……..
(a) – 6 (b) 6 (c) 0 (d) 12

15) $|-1\frac{2}{9}|$ …….. $1\frac{1}{9}$
(a) > (b) = (c) < (d) ≠

16) | - 6 | < ……..
(a) | 0 | (b) | - 1 | (c) | - 2 | (d) | - 4 |

17) Which of the following mathematical expressions does not represent an algebraic expression ……..
(a) 3 x + 2 y (b) x = 4 (c) 5x+3 (d) 4m-5

18) The algebraic term whose coefficient is 5 is ……..
(a) n – 5 (b) n + 5 (c) 5 n (d) $\frac{n}{5}$

19) | - 6 | = ……..
(a) – 6 (b) 6 (c) 0 (d) 12

Second: Answer the following questions:

1) Find GCF for the two numbers 6 , 9 ?
2) Mona has 18 bags of rice and 22 bottles of oil. She wants to distribute them into groups of the same number. what is the largest number of groups can be formed is ……
3) Find The least common denominator for the two fractions $\frac{3}{4}, \frac{1}{6}$?
4) Arrange the following in descending order 0 , - 28 , 15 , - 12 ?
5) Find The smallest non-negative integer is.
6) What is the coefficient of the algebraic term 7 x – 4 ?
7) what is the number of terms of the algebraic expression 8 x + 3 + 5 y + 7 ?
8) One-fifth of the number n ?
9) Write 5 numbers that are divisible by 2 and 3 together.
10) Write 3 numbers are divisible by 3 but not divisible by 2.
11) Write 3 numbers are divisible by 2, 3, and 5 together.
12) Can the number 52 be distributed among 6 students? Find the result and remainder, if exist?
13) Factorize the following numbers into their prime factors: 24, 20, 28, and 33
14) Find the GCF to the numbers 9 and 15
15) Find the LCM to the numbers 8 and 10
16) Write the number whose prime factors are 2, 3, 5 and the number whose prime factors are 3, 5, 5. Then write the GCF to the two numbers.
17) Walaa wanted to distribute 18 pens and 24 notebooks into equal groups. What is the largest number of groups and how many pens and notebooks are in each group? (express numerically this situation).
18) Walid has 14 apples and 16 oranges and wants to distribute them into equal groups. What is the largest number of groups and how many apples and oranges are in each group? (express numerically this situation).
19) Mohamed divides 36 bags of pasta and 42 cans of sauce equally into cartons. What is the largest number of cartons that can be used? How many bags of pasta are in each carton and how many cans of sauce are in each carton? (The books are the expression that represents this situation)
20) Walid bought $2\frac{2}{5}$ kg of tomatos and 1 kg of cucumbers. What is the total amount that Walid bought?
21) $\frac{3}{5} - \frac{2}{7}$ 22) $2\frac{5}{6} + 3\frac{1}{4}$
23) Marwa bought a piece of clouse of length $5\frac{3}{8}$ m. She used part of it of length $2\frac{7}{10}$ m to make a dress. Find the length of the left part.
24) Dalia studied Arabic for $\frac{7}{8}$ hour, then studied mathematics for $1\frac{1}{4}$ hour. Find the total number of hours that Dalia studied.

25) Write 5 numbers greater than - 2.
26) Write 5 numbers smaller than 1.
27) Arrange in an ascending order: 15 , 0 , - 3 , 2 , - 5 , 9 , - 17
28) Arrange in a descending order: - 8 , 7 , - 1 , 0 , 8 , - 9
29) Write the additive inverse of the numbers: 7 , - 5 , - 17 , 10 , 0
30) Write the number just after and before to the numbers: 14 , - 6 , 0 , 1 , - 2
31) Write a positive or negative integer that represents Emad withdrawing 450 pounds from the bank.
32) Write 5 Integers.
33) Write 5 Natural numbers.
34) Write 5 rational numbers
35) Write numbers in the form of $\frac{a}{b}$:
- 1.7 , 0.5 , 45 , - 2
36) Determine the following numbers on the number-line:
- 1.5 , 0.5 , 3 , - 2.5 , 0 , 1.5 , $1\frac{3}{4}$
37) What is the smallest positive integer, and what is the largest negative integer?
38) Which is greater | - 9 | or - 9 ?
39) Which is smaller $\frac{3}{5}$ or $\frac{2}{7}$?
40) Write is a rational number that lies between $\frac{5}{7}$ and $\frac{6}{7}$
41) Write is a rational number that lies between – 3.75 and – 3.76
42) Arrange in an ascending order:
$-2\frac{1}{2}$, $-1\frac{7}{8}$, $-3\frac{1}{4}$. 1.4 , 2.1
43) If | x | = 7, then find the possible values of and x.
44) Find the value of each of the following:
| - 55 | , | - 69 | , | $-2\frac{5}{9}$ |
45) Draw a venn diagram that represents the sets of numbers. Put the following numbers in their appropriate place:
14 , 0 , - 1.5 , - 5 , 2 , $-\frac{3}{5}$
46) Arrange in an descending order:
| - 18 | , - 20.14 , | $-2\frac{9}{10}$ | , | - 5 | , 3
47) | 9 | + | - 7 | = ……..
48) If the temperature to is 7 below zero, write the representing number.
49) The set which the number - 0.288 belongs.
50) Walid and his friends bought 5 pizza and divided each piece into 8 parts and each person eat: $\frac{3}{8}$, $\frac{2}{8}$, $\frac{5}{8}$, $\frac{1}{8}$, $\frac{2}{8}$. Then find the number of the remaining parts.
51) $\frac{2}{5}+\frac{1}{4}$ = ……..

52) Use venn diagram to find GCF to the numbers 24 and 32
53) Mention the absolute value of two opposite numbers and compare between them.
54) Identify the variables in the algebraic expression $5x - 7 + 3y + 5$.
55) Identify the constants in the algebraic expression $8 + 6n - 4$.
56) Identify the factors in the algebraic expression $a + 7 - \frac{b}{3} + 4$.
57) Identify the like terms in the algebraic expression $8a - 2a + 3$.
58) Write the number of terms in the algebraic expression $14 - 5m + 7 - 2n + 9$.
59) Write a life situation that expresses the mathematical expression: $k - 75$.
60) Write the algebraic expression that expresses twice a number subtracted from 5.
61) Write the algebraic expression that expresses half a number added to it is 7.
62) Write the algebraic expression that expresses a number divided by 5 then 3 is added.
63) Express the following mathematical expression using a verbal sentence $18 - 2x$
64) Find the value of n following: $5 \times (n + 6) = 45$
65) Write Algebraic expression: Multiplying a number by 6, then subtract the result from 18.
66) Classify the following mathematical expressions into numerical expressions and algebraic expressions:
$-3y$, $4 \times 3 + 2$, $+3x + 2n$, $5 - 3.4$, $+10v4$
67) Write the mathematical expression that represents the number of books that Walid read:
Walid read 5 literary books and ***d*** practical books.
68) Write the expression that expresses: Three times the number ***w*** added 7 to it.
69) Write the similar terms expressions: $4x + 3 - 4x + 4$
70) Write the coefficient of the algebraic expression $\frac{x}{9}$
71) Write the algebraic expression that expresses: 7 multiplied by the result of subtraction of ***h*** from 6

Fourth Lesson: **Ordering of Operations and Exponents** Week .....

Date: / /

Classroom Performance:

Activity (1) "Ordering of Operations"

Put the numerical expression in its simplest form, explaining the steps for ordering the operations in the correct order, in the following table:

$2^5 \div 2 - 6 \times 2$

1	
2	
3	
4	

Activity 2: "Where's the Mistake?"

If three students were asked to put the following numerical expression in its simplest form and their answers were different, cooperate with your partner to determine which of them has the correct answer and why?

1st student's answer	2nd student's answer	3rd student's answer
$18 \div (6-3)^2 + 4 \times 2$	$18 \div (6-3)^2 + 4 \times 2$	$18 \div (6-3)^2 + 4 \times 2$
$18 \div 3^2 + 4 \times 2$	$18 \div (3)^2 + 4 \times 2$	$18 \div 3^2 + 4 \times 2$
$18 \div 6 + 4 \times 2$	$18 \div 9 + 4 \times 2$	$18 \div 9 + 4 \times 2$
$18 \div 6 + 8$	$2 + 8$	$2 + 4 \times 2$
$3 + 8$	10	6×2
$= 11$		$= 12$

Homework:

Answer the following questions:

1) Write the number that represents the base in exponential form 4^3.
2) What is the exponential form of $6 \times 6 \times 6 \times 6$?
3) Find the value of each of the following exponential form: (a) 3^2 (b) 10^3
4) Put the following expression in its simplest form: $(15 - 9) + 3 \times 2^5$
5) Two students were asked to put the following numerical expression in its simplest form: $6 + 3\ (8 - 5) \div 3^2$, Their answers were completely different. Mona's answer was 25 and Hadeel's answer was 7. Which of them had the correct answer? Explain your steps.

Fifth Lesson: **Evaluating Algebraic Expressions** Week .....

Date: / /

Classroom Performance:

Activity (1) "Representing Situations"

Nahid wants to buy a number of books. Each book costs 70 pounds, and she has a discount coupon worth 20 pounds off the value of all purchases. Write an algebraic expression to represent this situation, then find how much money Nahid pays when she buys 4 books?

.....

.....

Activity 2: "Find the Value"

In front of you a set of cards share your partener to find the value of algebraic expressions of each card:

$5x - 3x + 1$ at $x = 2$	$\frac{1}{4}m - 2$ at $m = 2$	$8z + 3z + 9$ at $z = 1$	$10y - 2 \times 2$ at $y = 0.5$

.....

.....

Homework:

Answer the following questions:

1) Find the value of the numerical expression: $3 \times 10^2 - (6 + 4)$

.....

2) Find the value of the algebraic expressions: $3x + 4$ when $x - 1$

.....

3) Find the value of the algebraic expressions $5d - 2d + 3$ when $d = 3$

.....

4) Find the value of the algebraic expression $9 + (p - 3) + 2$ when $p = 2$

.....

5) Ftma wants to buy some notebooks. If the price of the notebook is 15 pounds and she has a discount coupon worth 10 pounds off the value of all purchases, write an algebraic expression to represent this situation, and what amount will she have to pay when buying 5 notebooks?

.....

Weekly Assessment (Week……...)

(Model A)

First: Choose the correct answer from the given answers:

1) The exponential form of a number with base 2 and exponent 3 is ……..

(a) 2^3 (b) 3^2 (c) 1^3 (d) 6^3

Second: Answer the following questions:

1) Find The numerical value of the exponential form 9^2

……

2) What is the exponential form for a number with a base of 1 and an exponent 6? What is its numerical value?

……

3) Express the following numerical expression in simplest form: $5 + 3 \times 3^2 - 5$

……

4) Find the value of the algebraic expression: $16 \div (10x - 3)$ when $x = 0.5$

……

(Model B)

First: Choose the correct answer from the given answers:

1) The exponential form 5^3 is equivalent to ……..

(a) 5 + 3 (b) 5 × 3 (c) 5 + 5 + 5 (d) 5 × 5 × 5

Second: Answer the following questions:

1) Find the additive inverse of the number 5^2

……

2) What is the exponential form of a number whose base 2 and exponent 4, and what is its numerical value?

……

3) Express the following numerical expression in simplest form:

$15 \div 3 - 2(4^2 - 15)$

……

4) Find the value of the algebraic expression: $8 - 5(m^3 - 7)$ when $m = 2$

……

(Model C)

First: Choose the correct answer from the given answers:

1) The exponential form of a number with base 5 and exponent 3 is ……..

(a) 5^3 (b) 3^5 (c) 15 (d) 3^3

Second: Answer the following questions:

1) Find The additive inverse of the number 6^2

……

2) What is the exponential form of a number whose base 5 and exponent is 2? and what is its numerical value?

……

3) Express in the simplest form: $5 \times 2^2 - [8 - (5 + 3)]$

……

4) Find the value of the algebraic expression: $(z^2 - 4) \div 7$ when $z = 5$

……

Sixth Lesson: **Applications on Algebraic Expressions** Week .....

Date: / /

Classroom Performance:

Activity (1) "Determine your steps"

Explain the steps you will take to find the value of the algebraic expression $(t^2 - 4) \div 6$ when $t = 4$ in the following table:

First step	
Second step	
Third step	

Activity 2 "Solving the code"

In front of you a set of cards. Share your parteners to find the value of the algebraic expressions on each card, explaining the steps for the solution:

$(a^3 - 7) \div 5$ at $a = 3$	$(13 - y^2) + 5$ at $y = 2$	$3 + (x^2 + 3) \div 2$ at $x = 3$

.....

.....

Homework:

Answer the following questions:

1) Explain the steps you will carry to find the value of the algebraic expression $(t^2 + 5) \div 7$ when $t = 4$

2) What operation do you perform first to find the value of the algebraic expression $2 (x + 2)$ Then find the value when $x = 2$

3) Find the value of the algebraic expression: $10 m + 2^2 + 4$ when $m = 5$

4) Find the value of the algebraic expression: $20 \div (x^2 - 15)$ when $x = 5$

5) Hosam wants to buy some shoes, so the price of one shoe was 150 pounds and he has a coupon worth 50 pounds from the value of all purchases.
Write an algebraic expression to represent this situation, then find how much Hossam will pay when he buys 3 shoes.

Seventh Lesson: **Determining Equivalent Algebraic Expressions** Week .....

Date: / /

Classroom Performance:

Activity (1) "Searching for Equivalence"

Find the value of the following two algebraic expressions using a positive integer equation of your choice. If the two algebraic expressions are equivalent, answer with "yes." If they are not equivalent, answer with "no."

	3 x + 6	3 (x + 2)	Are the expressions equivalent?
If x = ...			
If x = ...			

.....
.....

Activity 2 "Match the Equivalent Expressions"

In front of you a set of cards. share your partner to identify the equivalent expressions, then match each expression with its equivalent:

4 y + 3	**6 (2 y + 3)**	**5y−10**	**4y−8**
2 (2 y) + 3	**2 (2y − 4)**	**12y + 18**	**5(y−2)**

Homework:

Answer the following questions:

1) Are the two algebraic expressions: 3 x + 3 and 3 (3 x + 1) equivalent?
2) Are the two algebraic expressions: 2 (x + 3) and 2 x + 6 equivalent?
3) Are the two algebraic expressions: 6 x + 2 and 2 (3 x + 1) equivalent?
4) Is the algebraic expression 3 r + 3 and the algebraic expression 3 (r + 1) equivalent?at the value of (r = 1 , 2)
5) Are the two algebraic expressions: 5 x + 2 and 2 + 5 x equivalent? why?

Weekly Assessment (Week…….....)

(Model A)

First: Choose the correct answer from the given answers:

1) Which of the following algebraic expressions is equivalent to 3 (x + 5) ?

(a) 2 x + 5 (b) 3 x + 15 (c) 2 x + 15 (d) 3 x + 5

Second: Answer the following questions:

1) Are the two algebraic expressions: 2 (x – 3) + 4 x and 6 x – 6 equivalent? why?
2) Find the value of the algebraic expression 20 ÷ (6 x – 1) when x = 0.5
3) Rana wants to buy some children's toys from a store that offers a discount. The price of one toy was 80 pounds, and the store includes a 30-pound discount on the total bill, regardless of the number of toys. Write the algebraic expression for this situation, then find how much she will pay to she buys 5 toys?
4) The cost of buying a shirt is ***p*** pound, and the cost of buying trousers is ***q*** pound. If Ahmed bought 3 shirts and two trousers, then the algebraic expressions that represents the total cost is

(Model B)

First: Choose the correct answer from the given answers:

1) Which of the following algebraic expressions is equivalent to 2 (y + 4) ?

(a) 2 y + 4 (b) y + 8 (c) 2 y + 8 (d) y + 4 + 2

Second: Answer the following questions:

1) Are the two algebraic expressions: 3 (a + 2) and 2 a + 6 equivalent? why?
2) Find the value of the algebraic expression 18 – (4 k + 2) when k = 3
3) Ali wants to buy some books from a book fair, so the price of one book was 25 pounds, and the fair offers a discount of 15 pounds on the total purchases, no matter how much books are. Write an algebraic expression to represent the total amount that Ali will pay when buying the books, then find how much of it Ali will pay when buying 7 books?
4) The cost of renting a bicycle is R pounds per hour, and the cost of renting hemet is H pounds. if Sara rented a bicycle for 4 hours and a hemet, then the algebraic expression for this cost ?

(Model C)

First: Choose the correct answer from the given answers:

1) Which of the following algebraic expressions is equivalent to 5 (z – 2) ?

(a) 5 z – 2 (b) z – 10 (c) 5 z – 10 (d) 5 z + 10

Second: Answer the following questions:

1) Are the two algebraic expressions: 7 (b + 1) and 4 b + 7 equivalent? why?
2) Find the value of the algebraic expression (12 + 3 x) ÷ 5 when x = 1
3) Omar collected postage stamps, he already had 20 stamps and he buys 5 new stamps each week. Write an algebraic expression to represent the total number of stamps that Omar have after number of weeks, then find then find how many stamps that Omar have after 6 of weeks?
4) Laila bought a number of C sweets for 3 pounds per piece. And a number of M biscutes for 3 pounds per piece. The algebraic expression for this cost?

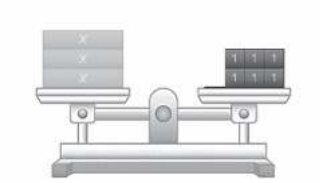
4 Fourth Unit

First Lesson: **Solving Algebraic Equations** Week .....

Date: / /

Classroom Performance:

Activity (1) "Balance 1"

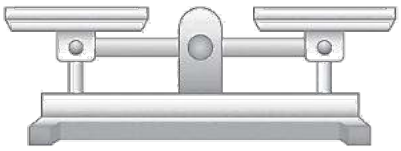


In cooperation with your partners, study the drawing, then complete:

The equation is …….

Solution of the equation …….

Activity (2) "Balance 2"



In cooperation with your partners, represent the following equation using the balance

x + 1 = 8

Activity (3) "Unknown Numbers Challenge"

In cooperation with your partners, find the solution to the following equations:

m + 5 = 12

7 = 4 – m

Homework:

Answer the following questions:

First: Solves the following equations using opposite operations:

1) A + 6 = 10

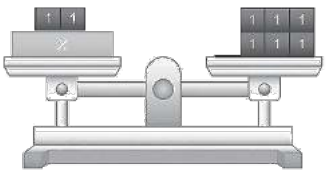
2) N – 7 = 5

3) x + 85 = 120

Second:

4) Calculate the value of a which satisfies the equation 5 a = 15

5) Write the value of x that expresses the following model:



Second Lesson: **Exploring Inequalities** **Week .....**

Classroom Performance: **Date: / /**

Activity (1) "The Worm Game"

At an amusement park, Mohammed read a sign that said: "The ages allowed to ride the worm game are over 12 years old." In cooperation with your group mates, write down four ages allowed to ride the game, four ages not allowed to ride the game.

Activity (2) "Equation or Inequality"

Using the cards in front of you, determine with your partner which of the following:

Equation	***Inequality***

$x + 5 = 12$, $x > -5$, $9 + z = 15$, $y < 10$, $z \geq 3$, $y - 3 = 10$

Homework:

Answer the following questions

1) If the minimum age required to join the club challenge for football is 14 years old, write down five ages allowed to join this game within the club.
2) Express using symbols: x is less than or equal to – 5.
3) Express using symbols: y is greater than or equal to 6
4) Read each mathematical statement and determine whether it is an equation or an inequality
   $x + 7 = 15$, $y < 12$, $3z = 21$, $5 \geq a$, $b > 4$
5) If the maximum height allowed to pass under a bridge is 2.8 m, write the inequality that expresses this situation.

Third Lesson: **Solving Inequalities** **Week .....**

Classroom Performance: **Date: / /**

Activity (1) "Hunting for Inequalities"

In front of you is a set of inequalities. Work with a group to choose the numbers that make the inequality true in Z (You can choose more than one number for one inequality) (15 , 5 , 0 , 1 , 6 , 3)

$x > 2$	$x \leq 5$	$x \geq 0$	$x < 10$

Activity (2) (Library Fundraising Project)

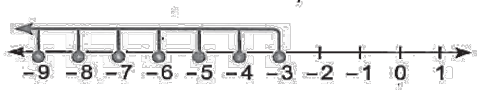
The sixth-grade students collect donations to buy new books for the school library in Egyptian pounds. Their goal is to collect a total amount x that is more than or equal to 50 pounds from each person. Write an inequality that expresses this. Then solve it in Z:



Homework:

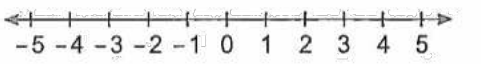
Answer the following questions

1) Write the equation represented by the opposite number-line:



2) What is the smallest integer that satisfies the inequality: $x \geq -6$

3) Solve inequality $y < -1$ in the set of integers and graph it on the number-line.



4) State three Integers possible solutions for the inequality $x \geq 8$

5) Write the smallest integer that satisfies the inequality $a \geq 5$

Weekly Assessment (Week…….....)

(Model A)

First: Choose the correct answer from the given answers:

1) Which of the following reprensents an equation ……..

(a) $x > 5$ (b) $y < 10$ (c) $m + 5 = 12$ (d) $z \geq 3$

Second: Answer the following questions:

1) What is the smallest Integer that satisfies the inequality $x \geq -6$, ?

……

2) Solve the equation $m + 5 = 12$.

……

3) Solve the equation $x = 15 + 8$

……

4) Represent the solution of the inequality in Z on the number-line: $x < -3$

……

(Model B)

First: Choose the correct answer from the given answers:

1) Which of the following reprensents an inequality ……..

(a) $x + 7 = 15$ (b) $z = 213$ (c) $y < 12$ (d) $y - 3 = 10$

Second: Answer the following questions:

1) What is the value of a that satisfies the eqaution $a + 5 = 15$?

……

2) Solve the inequality $x < 10$ (Use the numbers 3 , 6 , 1 , 0 , 5 , 15)

……

3) Solve the inequality $x + 4 > 9$ (Use the numbers 3 , 6 , 1 , 0 , 5 , 15)

……

4) If the maximum height allowed to pass under a bridge is 2.8 meters, write the inequality books that express this situation.

……

(Model C)

First: Choose the correct answer from the given answers:

1) The inequality is a mathematical sentence that contains one of the signs ……..

(a) equals (b) expresion (c) variable

(d) comparision(greater than ,less than, greater than or equal ,less than equal)

Second: Answer the following questions:

1) The solution of the eqaution x +85 = 120 in Z ?

……

2) Solve the equation: n – 10 = 3 in Z

……

3) State three Integers possible solutions for the inequality $x \geq 8$

……

4) Express the following inequality "y is greater than or equal to 6".

……

5 Fifth Unit

First Lesson: The Relation Between Dependent and Independent Variables **Week .....**

Date: / /

Classroom Performance:

Activity (1) "A trip to the park"

A family is planning a trip to the park. The cost of entering the park is 10 Egyptian pounds per person.



- What is the independent variable in this situation? what is the independent variable?
- If the number of number of the family is 4 persons, what is the total cost?

Activity (2) "Fruit garden"

A farmer owns a fruit garden grows more fruit trees, the higher the amount of fruit collested.



- What is the independent variable in this situation?
- What is the dependent variable in this situation?

Activity (3) "Fuel consumption"

A car travels a distance of 8 kilometers for every liter of fuel it consumes.



- Detrmine the independent and dependent variables in this situation.
- Write an equation that expresses the relation between the distance traveled and the amount of fuel consumed.

Homework:

1) In the relation between the variables, answer:
   a) What is the variable that determines the values of the other variable?
   b) What is the variable whose value depends on the other variable?
2) Increasing the workers number in a project decreasing the time required to complete the project, detrmine the dependent variables in this situation.
3) If the monthly club membership fee is 150 pounds in addition to 20 pounds for each training session, detrmine the independent and the dependent variables.
4) In the previous situation. Write the equation that expresses the relation between the number of training sessions and what is paid.
5) Detrmine the variables cintained in the equation y = 3 x + 2

Second Lesson: **Applications on Dependent and Independent Variables** **Week .....**

Date: / /

Classroom Performance:

Activity (1) "Planting Seedlings"

Ahmed planted a small seedling and noticed that its height increased by 0.5 cm every day. The initial height of the seedling was 10 cm.

- What is the independent variable? What is the dependent variable?
- Write an equation expresses seedling height (E) after a number of days (D).
- What is the height of the seedling 7 days after planting?

Activity (2) "Renting Bicycles"

A bicycle rental shop charges 20 Egyptian pounds as a fixed rental fee, in addition to 5 Egyptian pounds for each hour of rental.

- What is the independent variable? What is the dependent variable?
- Write an equation that expresses the total cost (T) of renting a bicycle for a number of hours (S).
- If Mina rents a bicycle for 3 hours, how much will he pay?

Activity (3) "Reading Books"

Mohamed read 15 pages of the book daily.

- What is the independent variable? What is the dependent variable?
- Write an algebraic equation to express the number of read pages (p) after a number of days (D).
- If after 5 days, how many pages did Mohamed read?

Homework:

Answer the following questions:

1) Identify both the dependent and independent variables in the equation: y = 3x + 5
2) Identify both the dependent and independent variables if the value of (y) depends on the value of (x).

3) A farme produces number of eggs daily. Every 6 eggs are placed in one carton. What is the dependent and independent variables? write an equation represent this relation.
4) A farmer grows tomatoes. it grows at a rate of 3 cm each day.
a) What is the dependent and independent variables?
b) If its height starts to by 5 cm, write an equation represent this relation.
5) Sara organized her birthday party. She decided to buy balloons for 3 pound each.
a) What is the dependent and independent variables?
b) If Sara bought 10 balloons, what will be the total cost?

Weekly Assessment (Week……...)

(Model A)

First: Choose the correct answer from the given answers:

1) "water temperature depends on the heating duration", the dependent variable is ……..
(a) heating duration (b) water temperature (c) amount of water (d) vessel type

Second: Answer the following questions:

1) What is the equation for "total cost (t) to buy of number of apples (n) each of 5 pounds" ?
……
2) A farmer grows new trees. The height of the tree increasing by 10 cm every month. What is the independent variable?
……
3) Khaled saves an amount of money, adding 50 pounds weekly to his savings. What is the dependent variable?
……
4) A store organizes a discount where the customer gets a 10 pound discount on every product they buy.What is the dependent variable? If the original product price is x, write an equation that shows the price after the discount (d).
……

(Model B)

First: Choose the correct answer from the given answers:

1) The independent variable in the situation "the distant a car travels depends on the amount of fuel in its tank" is the ……..
(a) traveled distance (b) car type (c) amount of fuel (d) car speed

Second: Answer the following questions:

1) In the equation: $y = 2x + 1$, Find the independent variable .
……
2) A florist sells bouquets of flowers, each contains 7 flowers. What is the dependent variable?
……
3) A painter paints walls. It takes 3 hours to paint each room. Identify the independent and dependent variables.
……
4) A school organizes a trip to visit the museum. The entrance ticket price for one student is 15 pounds. Identify the independent and dependent variables. Write an equation that expresses the total cost (k) for a number of students (n).
……

(Model C)

First: Choose the correct answer from the given answers:

1) Growth of a plant depends on amount of water it receives. the dependent variable is …..
(a) the amount of water (b) plant type (c) plant growth (d) sun light

Second: Answer the following questions:

1) In the equation: $y = 3x + 5$, Find the independent variable .

……

2) Sami reads a book. He reads 20 pages every day. What is the independent variable?

……

3) Tariq collected stamps. He already has 30 stamps and buys 5 new ones every month. What is the independent variable?

……

4) There are 500 liters of water in a water tank, and 20 liters are used every day. Identify the independent variable and the dependent variable. Write an equation that shows the amount of water remaining in the tank (m) after a number of days(d).

……

Third Lesson: **Analyzing The Relation Between Dependent and Independent Variables** **Week .....**

Date: / /

Classroom Performance:

Àctivity (1) "Analyzing Tábles"

The following table shows the relation between the number of working hours in a factory and the number of parts produced. Identify the dependent and independent variables in the table, then write a mathematical equation that describes this relation.

No. of working hours	No. of parts
1	10
2	20
3	30
4	40

Activity (2) "The Egyptian national team in every match it plays"

The football team scores 3 goals each match it plays. Identify the independent and dependent variables. If the team wants to score 21 goals, how many matches should it play? (Discuss with your partner)

……

Activity (3) "The Garden"

An engineer wants to design a rectangular garden. If the width of the garden is fixed at 5 meters, What is the independent and dependent variable? Describe the relation between the length of the garden and its area, assuming that the width is constant. If the of the garden is 12 meters, what will be its length area?

……



Homework:

Answer the following questions:

1) Identify the dependent variable. If the price of a shirt (b) and the cost of printing the name on it is 10 pounds, the equation is A = b + 10 (represents the total price)
2) A bookstore sells notebooks for 5 pounds each. There is a special offer of 10 pounds off the total bill if the customer buys 5 or more notebooks. What is the independent variable? If a customer buys 7 notebooks, what will the total cost be after discount?
3) A turtle moves at a speed of 5 meters per minute. What is the independent variable? Write an equation that shows the distance the turtle travels (D) after a number of minutes (M).
4) Write the following table shows the relation between the two variables x , y write the equation.
5) Asmaa reads 8 pages from a book every day. What is the dependent variable? write an equation that shows the pages Asmaa reads (N) after number of days (D).

x	1	3	5	9
y	5	15	25	45

Fourth Lesson: **Graph Representation for Dependent and Independent Variables** **Week .....**

Date: / /

Classroom Performance:

Activity (1) "Amusement Park"

Your friend played 5 more games than you because he came to the amusement park before you. Write an equation represents this situation using the variables x and y

Activity (2) Ashraf's Table

Collaborate with your partner to complete a table for the variables x and y using the equation $y = x + 5$

x				
y				

……

……

Activity (3) (Number of Goals)

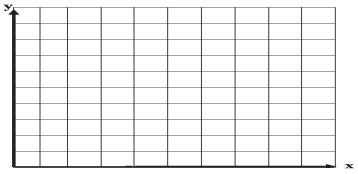
A team plays football, scoring an average of 2 goals in each half they play. Identify the independent and dependent variables. Work with your group to create a table showing the total number of goals after playing 1, 2, 3, and 4 half(s).

Homework:

Answer the following questions:

1) Identify the dependent and independent variables in the equation: y = 3 x + 5
2) The more hours of studying, the higher the test scores. In this relation, what is the dependent and independent variables?
   Using the formula, complete the table and represent it graphically.

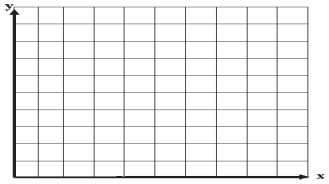
3)



$y = x + 10$

x	1	2	3	4
y	.....	12	.....	.....
(x,y)	.....	.....	.....	.....

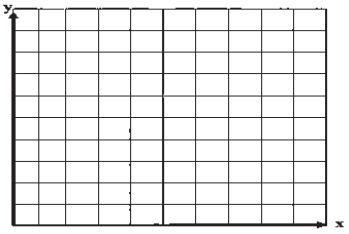
4)



$y = x + 3$

x	0	1	2	3	4
y	.....	.....	.....	.....	.....

5)



$y = 3x$

x	1	2	3	4
y	.....	.....	.....	.....
(x,y)	.....	.....	.....	.....

Second Month Exercises

First: Choose the correct answer from the given answers:

1) 2^3 = ……..
(a) 9 (b) 8 (c) 6 (d) 5

2) The first step to simplify $30 – 7 + 3^2$ is ……..
(a) Subtraction (b) Division (c) the exponent (d) Addition

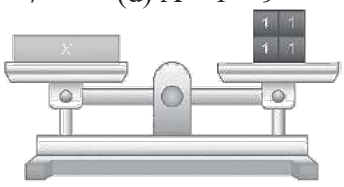
3) 1^5 = ……..
(a) 5 (b) 1 (c) 7 (d) 5

4) To find the value of the expression $5 + 3 \times 4^2 – 10$, which operation is performed first?
(a) 5 + 3 (b) 3 × 4 (c) 4^2 (d) 4 – 10

5) All of the following algebraic expressions are equivalent to the algebraic expression 2 (6 x + 5) except ……..
(a) 12x + 10 + 5 (b) 5x + 7x + 10 (c) 10x + 2x + 10 (d) 12x + 10

6) Which of the following equations has a solution of 8 ……..
(a) y – 4 = 12 (b) d + 2 = 10 (c) x + 1 = 7 (d) A – 1 = 9

7) Which of the following equations represents the corresponding two-pan balance
(a) 4 x (b) x + 4
(c) 4 x = 1 (d) x = 4



8) If the depth of the swimming pool does not exceed 5 meters, which of the following could be the depth of the pool?
(a) 6.8 (b) 8 (c) 4 (d) 10

9) Ahmed reads at least 30 pages daily. Which of the following can express the number of pages Ahmed reads per day?
(a) 15 (b) 40 (c) 29 (d) 25

10) The number 5 is one of the solutions to the inequality ……..
(a) x > 5 (b) x < 5 (c) x < 7 (d) x > 7

11) Which of the following does not belong to the solution set of the inequality x < 8 in Z ……..
(a) – 9 (b) – 7 (c) 8 (d) 5

12) An equation is a mathematical sentence that includes a relation …….. between two mathematical expressions
(a) > (b) = (c) < (d) ≤

13) In the equation x = 3, the symbol x represents……..
(a) Independent (b) Dependent (c) coefficient (d) constant

14) If x and y are variables and x is the independent variable, the equation that expresses the rule (multiply by 5 then add 3) is ……..
(a) x = 5y + 3 (b) y = 5 + 3x (c) y = 5x + 3 (d) y = 3x + 3

15) Mona recorded the total cost of electricity consumed in a month d and the number of kilowatt hours they consumed in the same month r.
The cost d represents ……..
(a) dependent (b) independent (c) coefficient (d) constant

16) If the number of problems you solve m and the time required to solve n, then the dependent variable is ……..

(a) number of problems m (b) number of problems n
(c) time solve m (d) time solve n

Answer the following questions:

1) Find $4 \times 5 + 3^2$?
2) Find $92 - 24 \div 4 + 11$?
3) Find the value of the expression $7 \div (10x - 4)$ when $x = 0.5$
4) Find The value of A in the equation $A - 7 = 15$?
5) Write the expression that expresses x as greater than or equal to 7 ?
6) What is the dependent variable in the equation $y = 3x + 2$?
7) What is the independent variable in the equation $5 - y = 4x$?
8) In the equation $y = 8x + 1$, if $x = 1.5$, Find the value of y ?
9) The number of notebooks you can buy depends?
10) $16 \div 4 + 5^2$
11) $8 \times 2^2 - 2 \times 5$
12) $3 [(2^2 + 4) + (1 + 3^2)] \times 2$
13) $3 \times [(5 - 2) + 3]^2$
14) $5 \div 3^2 \times 2 + 50 \div 5$
15) $3 + 6 \times (5 + 4) \div 3$
16) $(2 + 4) \times 7 - 2^3 \div 8$
17) $(6^2 + 4) \div (9 - 5)$
18) $(8^2 \div 4 - 5) \times 3 + 2$
19) $3 \times 4^2 - 7 \times (4 + 1)$
20) Find the value of: $4 + 9 - (2x + 8 - 5)$ if $x = 2$
21) Find the value of: $7 (y^2 - 4) - 10$ if $y = 4$
22) Find the value of: $3 \times d^3 + 3 (6 - 3)^2$ if $d = 2$
23) Find the value of: $3 (k^2 - 6)$ if $k = 4$.
24) Find the value of the algebraic expression:

$7 + 6 (m^2 - 3)$ if $m = 4$

25) $(7 + 3) \div 2 \times 3 - 2^3$

26) $36 \div 4 + 3^2 \times 2$

27) $2 - [\,(7 - 3) - 2^2]$

28) Are the algebraic expressions $(2x + 6)$ and $2(x + 3)$ equivalent?

29) Are the algebraic expressions $2x + 6$ and $2(x + 3)$ equivalent?

30) Are the algebraic expressions $3x + 2$ and $2(x + 2)$ equivalent?

31) Are the two algebraic expressions $4x + 4$ and $2x + 2(x + 2)$ equivalent?

32) Are the two algebraic expressions $x + 3x + 4$ and $2(2x + 1)$ equal when $x = 5$?

33) Are the two algebraic expressions $6(2x + 3)$ and $12x + 18$ equivalent?

Solve the following equations:

34) $12 + y = 45$

35) $v - 21 = 85$

36) $5x + 6 = 26$

37) $7x - 8 = 20$

38) $\frac{1}{2}x - 8 = 4$

39) $\frac{1}{4}x = 3$

40) $f - 12 = 15$

41) $5 + p = 19$

42) Write inequality that express x is greater than or equal to – 3

43) A train car can hold a maximum of 48 persons. State 3 possible number of persons who can ride the train car?

44) Write 3 possible solutions to the inequality $x < 9$ in Z and represent it on the number-line.

45) Write 3 possible solutions to the inequality $x > 15$ in Z and represent it on the number-line.

46) Write of 3 possible solutions to the inequality $x < 24$ in Z and represent it on the number-line.

47) Mention 3 possible solutions to the city $x > 15$ in Z and represent it on the number-line.

48) Mention 3 possible solutions to the inequality $x \geq 6$ in Z and represent it on the number-line.

49) Write what the inequality $x > 5$ in Z and represent it on the number-line.

50) Write what the inequality $x \leq 8$ in Z and represent it on the number-line.

51) If the number of problems that Adam solved yesterday was more than 20 problems, mention 3 possible solutions represent the number of problems that Adam solved?

52) If the rule is multiply by 2 and add 7, write the equation that expresses this using the two variables x and y, where x is the independent variable, and if $x = 3$, find the value of y?

53) If the rule is multiply by 3 and add 5, write the equation that expresses this using the two variables x and y, where x is the independent variable, and if x = 2, find the value of y?

54) If the rule is multiply by 6 and add 4, write the equation that expresses this using the two variables x and y, where x is the independent variable, and if x = 4, find the value of y?

55) If the rule is add 2 then multiply by 3, write the equation that expresses this using the two variables x and y, where x is the independent variable. If x = 3, find the value of y?

56) If the rule is add 5 then multiply by 2, write the equation that expresses this using the two variables y and x, where x is the independent variable. If x = 4, find the value of y?

57) If the rule is to add 0.7 then multiply by 3, write the equation that expresses this using the two variables x and y where x is the independent variable, and if x = 2, find the value of y?

58) State the dependent and independent variables if the food bill is m and the number of meals is n?

59) Identify the dependent and independent variables if the price of the pants that Amjad bought is t and the number of pants is k?

60) Determine the dependent and independent variables if the number of meals the restaurant sells is n and the profit it earns a?

61) From the following table use the two variables x and y, where x is an independent variable, write the equation that expresses the table:

x	0.5	1	1.5	2	2.5
y	1.5	3	4.5	6	7.5

62) Using the following table using the two variables x and y, where x is an independent variable, write the equation that expresses the table:

x	5	6	7	8	9
y	7	8	9	10	11

63) Using the following table using the two variables x and y, where x is an independent variable, write the equation that expresses the table:

x	8	10	12	14	16
y	4	5	6	7	8

64) If the difference between Mohsen's age and Khaled's age is 4 years, and Mohsen's is older than Khaled's, write the equation that expresses the previous situation. If Khaled's age is 16 years, find Mohsen's age

65) Using the following table using the two variables x and y, where x is an independent variable, write the equation that expresses the table:

x	3	4	5	6	7
y	0	1	2	3	4

66) If the rule is add 0.8, write the equation that expresses this using the two variablesx and y, where x is an independent variable. If x = 2.7, find the value of y?

67) Hanaa bought a set of notebooks if the price of the notebook is 7 pounds, assuming that x represents the number of notebooks and y is the price of the notebooks. Write the equation that expresses the previous situation, then graph it.

68) Mervat bought a set of cakes if the price of the piece is 5 pounds, assuming that x represents the number of pieces and y is the price of the pieces. Write the equation that expresses the previous situation, then graph it.

69) If the price of 5 cans of juice is 30 pounds and x is the number of cans of juice and y is the total price, write the equation that expresses the previous situation and then graph it.

70) If the price of 3 apples is 30 pounds and x is the number of apples and y is the total price, write the equation that expresses the previous situation and then graph it.

71) Graph the following equation: $y = x - 1$

72) Graph the following equation: $y = 2x + 3$

6 Sixth Unit

First Lesson: **Data and Statistical Questions** **Week .....**

Date: / /

Classroom Performance:

Activity (1) "Play and Sort"

You have a set of questions in front of you. Sort each question into a "statistical question" or a "non-statistical question."

- How many hours did the grade 6 students spend watching T.V. last week?
- How tall is the tallest tree in the public park?
- What are the favorite types of games for children in your neighborhood?
- How many members are in your family?

Activity (2) "Data and Symbols"

Share with your partner:

Look at the following questions. If it is a statistical question, draw a symbol to show the variety of data (such as a group of different shapes: a circle, square, triangle).

(●▲■●) If it is a non-statistical question, draw a symbol to show a single piece of data (such as a single. (●) circle)

- What color is the shirt of the partner sitting next to you right now?
- What colors of cars pass by the school in one hour

Activity (3) "The School Canteen"

Share with your group: Design a statistical question to collect numerical data

Situation: You are in charge of the school canteen and want to know what drinks are most popular among the students to ensure their availability. Develop a statistical question that you can ask the students to answer this situation.

- What types of answers will you expect to get from the students?
- How can you collect this data from a large number of students?

Homework:

Answer the following questions:

1) What is the main purpose of asking the statistical question?
2) What type of question is (What are the colors of the Egyptian flag)?
3) How many goals has Mohamed Salah scored in the English Premier League this season? Is this a statistical or non-statistical question? Explain your answer.
4) Identify the statistical question and the type of data represented opposite?
5) Classify the following data into numerical and descriptive data:

   Name - Height - Number of brothers - Nationality - Favorite subject - Weight

Second Lesson: **Exploring the Histogram** **Week .....**

Date: / /

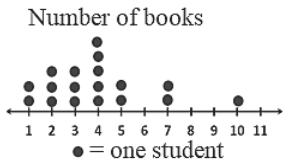
Classroom Performance:

Activity (1) "Discover the Most Active Reader"

The dot graph opposite shows data for a group of students about the number of books they read during a month

The number of students who read the largest number of books = …….

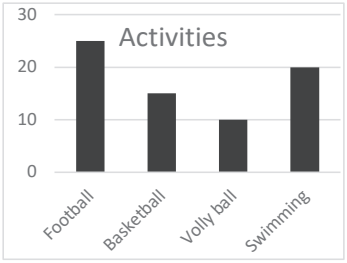
The number of books read by the largest number of students = …….



Activity (2): "Which sport leads the competition?"

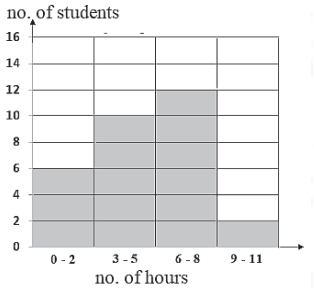
The bar graph opposite shows the favorite sports activities for a group of students

- The number of students who prefer football =
- The number of students who prefer volleyball =



Activity (3): "Who studies the most?"

Observe the graph opposite and then complete:
The graph opposite is called =
Number of students who study 6 hours or more =
The vertical axis represents



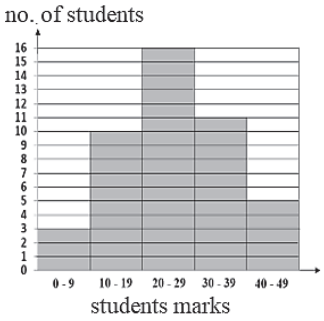
Homework:

Answer the following:

1) Which graph shows numerical data grouped into intervals?
2) Which graph includes data shown above the number line?

From the graph opposite, **answer the following:**

3) What is the total number of students who attended the test?
4) How many students represents the greatest interval?
5) What is the interval represents the smallest numbre of students?



Third Lesson: Representing Data Using Histograms

Week .....

Date: / /

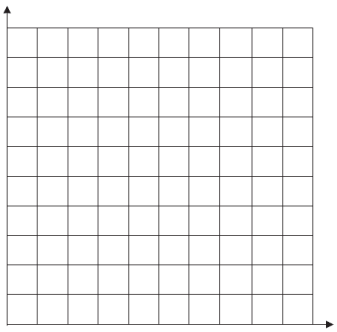
Classroom Performance:

Activity (1) "How many stories did we read?"

The following table shows the number of stories read by a group of students. Represent the data using a histogram. Then answer the questions:

No.of stories	0	1	2	3	4	5	6	7	8	9	10	11
Frequency	1	3	3	4	2	4	3	4	2	2	2	1

The ange = ……..
Number of students who read fewer than 3 stories = …..
Number of students who read more than 8 stories = …..

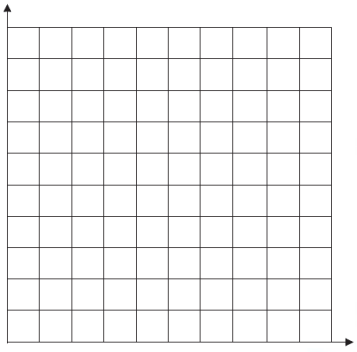


Activity (2): "Youngest and oldest?"

The following table shows the ages of a group of students participating in the sports activity. Represent the data using a histogram, then answer the questions:

No.of stories	5	8	9	10	11	14	15	16	19	20	23	24
Frequency	4	5	3	7	4	5	6	4	10	2	2	4

The ange =
Number of students under 10 years old =
Number of students over 19 years old =



Homework:

1) How do you calculate the range for a data set?
2) State a property of a histogram.

The following table shows the number of hours of television watched during a month for a group of persons. Represent the data using a histogram and then **answer the following questions:**

No. of hours	0	3	4	5	6	9	10	12	14	15	18	19	20
Frequency	10	25	5	20	15	15	10	5	5	5	10	5	3

3) What is the total number of persons who participated in the survey?
4) How many persons watched television for greater than or equal to 10 hours?
5) Which interval represents the smallest number of persons?

Weekly Assessment (Week…….....)

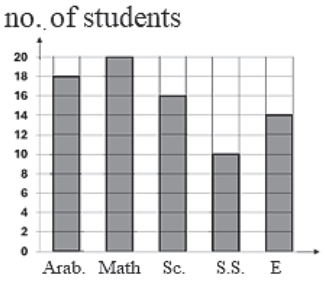
(Model A)

First: Choose the correct answer from the given answers:

1) A question that has many different possible answers is called a question ……..
(a) statistically (b) Numerically non-statistical
(c) Descriptively non-statistical (d) Non-statistical

Second: Answer the following questions:

From the opposite graph:



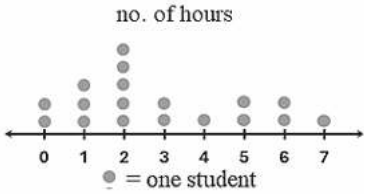
1) What is the corresponding graph called?
2) What is the total number of participants in the survey?
3) What is the subject preferred by the largest number of students?
4) Find the range for the values 7,3,5,11 and 8

(Model B)

First: Choose the correct answer from the given answers:

1) From the numerical data
(a) Favorite Color (b) number of brothers (c) name (d) jo

Second: Answer the following:

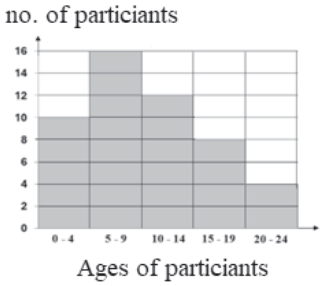


1) What is the name of the graph opposite?
2) What is the total number of participants in the survey?
3) What is the number of reading hours for the largest number of students?
4) What is the difference of the number of hours between the students who read 2 hours, 4 hours?

(Model C)

First: Choose the correct answer from the given answers:

(1) From the descriptive data
(a) height (b) number of brothers (c) favorite sport (d) temperature



Second: Answer the following:

1) What is the opposite graph called?
2) What is the total number of participants in the survey?
3) What is the number of participants over 14 years old?
4) What is the number of panticipants less than 10 years?

Fourth Lesson: **Exploring Box Plot** **Week .....**

Date: / /

Classroom Performance:

Activity (1): "Discover the Median"

Write the median for the following set of data:

9 , 1 , 8 , 2 , 3 , 7 , 4

The order is: .....

The median is: .....

Activity (2) "Draw a Box Plot"

Represent the following data using the box plot, then complete:

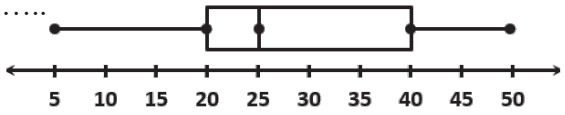
16 , 18 , 11 , 20 , 10 , 8 , 12 , 14

a) Minimum value = ...
b) Maximum value = ...
c) Median = ...
d) Upper quartile = ...
e) Lower quartile = ...

Activity (3): "Find information from the box plot"

Observe the corresponding box plot, then complete:

a) Minimum value = ...
b) Maximum value = ...
c) Median = ...
d) Upper quartile = ...
e) Lower quartile = ...



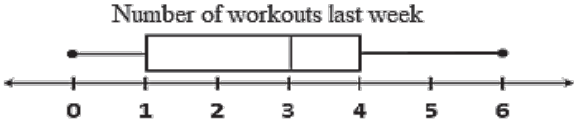
Homework:

Answer the following:

1) What is the middle value in the ordered data?
2) What quartile does the median represent in a box plot?

* Observe the box plot and answer:

3) What is the lower limit?
4) What is the median?
5) What is the upper quartile?



Fifth Lesson: **Applications on Data Representations** **Week .....**

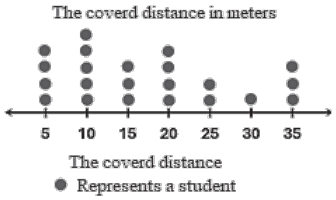
Date: / /

Classroom Performance:

Activity (1): "Can a dot plot answer?"

Observe the graph opposite, then identify the questions that can be answered:

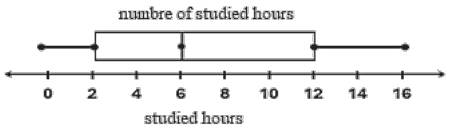
1) How many students participated in the survey?
2) How many students travel a distance of 14 to 27 meters?
3) How many students travel a distance of 20 meters?
4) What is the least common interval?



Activity (2): "What secrets can a box plot reveal to us?"

Observe the graph opposite, then identify the questions that can be answered:

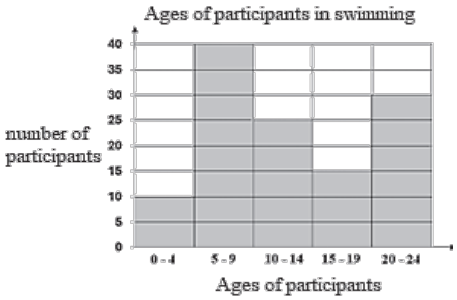
1) How many students participated in the survey?
2) What is the median of the studied hours?



Activity (3): "What does the frequency histogram tell us?"

Observe the graph opposite, then identify the questions that can be answered by it.

1) How many participants were between the ages of 15 and 19?
2) What is the most common interval?



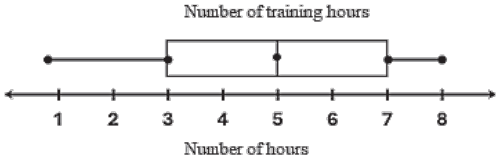
Homework:

Answer the following:

1) What is a suitable graph to easily find the median?
2) What is a suitable graph to answer the question: Which interval is most common?

** Observe the box plot and then answer:*

3) What is the median for the data?
4) Write a question that can be answered using the box plot.
5) Write a question that cannot be answered using the box plot.



Weekly Assessment (Week……...)

(Model A)

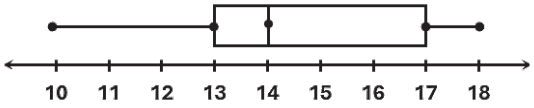
First: Choose the correct answer from the given answers :

1) The appropriate graphic representation to easily find the value of the median is

(a) histogram (b) line plot (c) culumns (d) box plot

Second: Observe the box plot and then answer the following:

1) Find the median for the data set 5, 7, 6, 4, 6 ?
2) What is the value of the median?
3) What is the value of the lower quartile?
4) What is the value of the upper quartile?



(Model B)

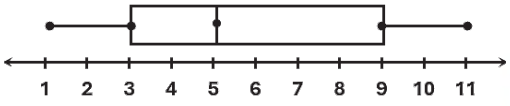
First: Choose the correct answer from the given answers:

1) The appropriate graph that displays single values is ……..

(a) histogram (b) line plot (c) box plot (d) b and c together

Second: Observe the box plot and then answer the following:

1) Find The median for the data set 1, 4, 9, 5, 3 ?
2) What is the value of the median?
3) What is the value of the maximum?
4) What is the value of the lower quartile?



(Model C)

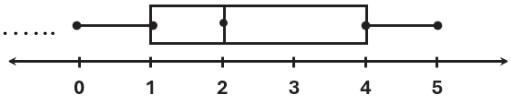
First: Choose the correct answer from the given answers :

2) The suitable graph to answer the question: Which interval is least common?

(a) histogram (b) line plot (c) box plot (d) culumns

Second: Observe the box plot and then answer the following:

1) The median for the data set 1, 5, 8, 4, 7 is = ……..
2) What is the value of the median?
3) What is the value of the minimum?
4) What is the value of the third quartile?



7 Seventh Unit

First Lesson: **Exploring the Balance of Data Sets** Week .....

Date: / /

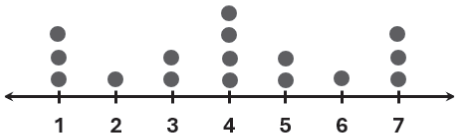
Classroom Performance:

Activity (1): "Where is the balance point?"

Determine the balance point for the opposite graph and whether the graph is symmetrical or asymmetrical.

The palace point is .....

the graph is .....

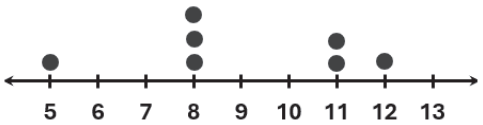


Activity (2): "Find the balance point"

Determine the balance point for the opposite graph and whether the graph is symmetrical or asymmetrical.

The balance point is .....

the graph is .....

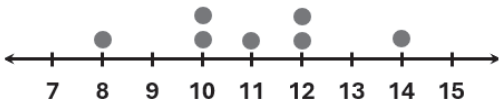


Activity (3): "Find the balance point"

Determine the balance point for the opposite graph and whether the graph is symmetrical or asymmetrical.

The balance point is .....

the graph is .....



Homework:

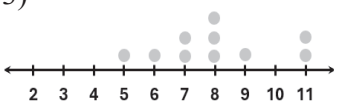
Answer the following:

1) What is the point called that devides (describes) a set of data such that the numbers on both sides are balanced?

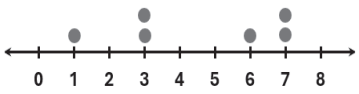
2) How do you check the balance point for a dot plot?

* Determine the balance point for each of the following graphs and whether the graph is symmetric or not ymmetric

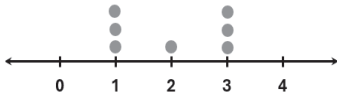
3)



4)



5)



Second Lesson: **Interpreting Mean** Week .....

Date: / /

Classroom Performance:

Activity (1): "How does algorithms help us to find the arithmetic mean?"

Find the arithmetic mean for the values 8, 2, 5, 4, 6 using the algorithm:

.....
.....
.....

Activity (2): "Find the arithmetic mean from the data table"

The table opposite expresses the number of pencils brought by a group of students. Find the arithmetic mean for the number of pencils shown in the table.

Student	*Student (A)*	*Student (B)*	*Student (C)*	*Student (D)*
Number of pencils	**8**	**4**	**5**	**3**

Homework:

Answer the following:

1) How do you calculate the arithmetic mean of a set of values?
2) Give an example measure for central tendency measurements.
3) Find the arithmetic mean of the values: 7, 4, 2, 8, 3, 6 using the algorithm.
4) Find the arithmetic mean of the values: 3, 7, 6, 7, 4, 5, 3 using the balance point
5) The table opposite expresses the number of pencils brought by a group of students. Find the arithmetic mean of the number of pencils shown in the table.

Student	*Student (A)*	*Student (B)*	*Student (C)*	*Student (D)*
Number of pencils	**9**	**12**	**7**	**8**

Weekly Assessment (Week……...)

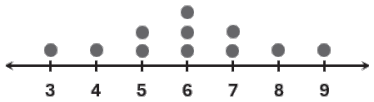
(Model A)

First: Choose the correct answer from the given answers:

1) The point that devides a set of data such that the numbers are balanced on both sides is ……. (a) absolute value (b) range (c) palance point (d) minimum value

Second: Answer the following:

1) Find the equilibrium point for the opposite graph.



2) Find the arithmetic mean for the values: 15, 20, 16, 7, 2

3) The opposite table expresses no. of pencils brought by a group of students. Find the arithmetic mean for the number of pencils.

Student	*Student (A)*	*Student (B)*	*Student (C)*
Number of pencils	4	12	5

4) From the previous table find the number of pencils brought by the students A,B?

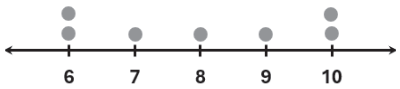
(Model B)

First: Choose the correct answer from the given answers:

1) ……. is one of the measures of central tendency.
(a) range (b) mean (c) maximum value (d) upper quartile

Second: Answer the following:

1) Find the palance point for the opposite graph.



2) Find the arithmetic mean for the values: 27, 15, 30, 12

3) The opposite table expresses no. of pencils brought by a group of students. Find the arithmetic mean for the number of pencils.

Student	*Student (A)*	*Student (B)*	*Student (C)*
Number of pencils	2	6	7

4) From the previous table find the number of pencils brought by the students B,C?

(Model C)

First: Choose the correct answer from the given answers:

1) ……. = sum of values ÷ their number
(a) range (b) mean (c) maximum value (d) upper quartile



Second: Answer the following:

1) Find the paiance point for the opposite graph

2) Find the arithmetic mean of the values: 12, 8, 2, 3, 6, 5

3) The opposite table expresses no. of pencils brought by a group of students. Find the arithmetic mean for the number of pencils.

Student	*Student (A)*	*Student (B)*	*Student (C)*
Number of pencils	2	6	7

4) From the previous table find the number of pencils by the students A,C?

Third Lesson: **Exploring Median, Mode, and Outliers** Week .....

Date: / /

Classroom Performance:

Activity (1): "A trip into the Numbers: Calculate the Most Important Statistical Values"

Observe the values and then complete: 7, 0, 8, 7, 10, 13, 7, 12

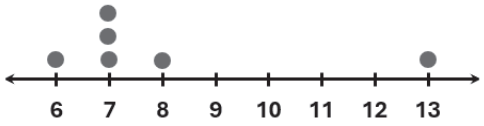
The order: ……..

The mode = ……. The median = …….

The mean = ……. The outlier = …….

Activity (2): A Journey into the Points: Explore the Statistical Values

Observe the chart opposite and then complete:



The mode = …….

The median = …….

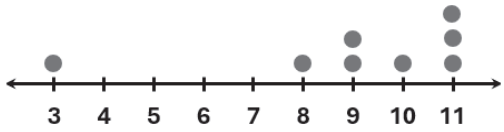
The mean = …….

The outlier = …….

The effect of an outlier on the mean makes = …….

Activity (3): "A Trip into numbers: Explore Statistically Significant Values"

Observe the chart opposite and then complete:



The mode = …….

The median = …….

The mean = …….

The outlier = …….

The effect of an outlier on the mean makes = …….

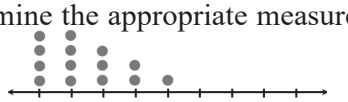
Homework:

Answer the following:

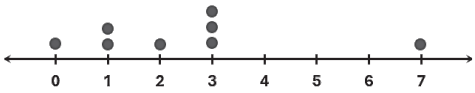
1) What is a value called that is significantly larger or smaller than the other values in a data set?

2) What is the most appropriate measure of central tendency if an outlier exists?

3) Observe the graph opposite and determine the appropriate measure of central tendency to represent the data.



4) Observe the graph opposite and then find the median, mode, mean, and extreme value:



5) what is the effect of the outlirs on the mean if one of the outlirs is larger than the valus an the other is smallr than the values .

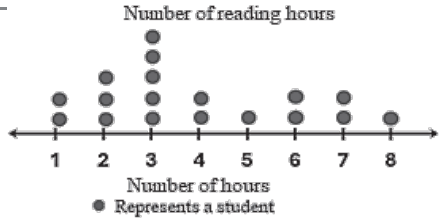
Fourth Lesson: **Exploring The Range** Week .....

Date: / /

Classroom Performance:

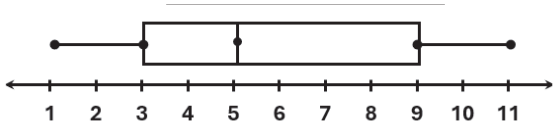
Activity (1): "Exploring the range from a Dot Graph"

Observe the corresponding dot graph and then complete:
The maximum value = ……..
The minimum value = ……..
The range value = ……..



Activity (2) Exploring the Range from a Box Plot"

Observe the opposite box plot and then complete:
The maximum value = ……..
The minimum value = ……..
The range value = ……..



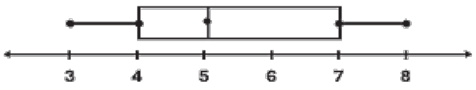
Activity (3) "Measurement variability between values Calculate the range"

Observe the opposite table and then complete:
The maximum value = ……..
The minimum value = ……..
The range value = ……..

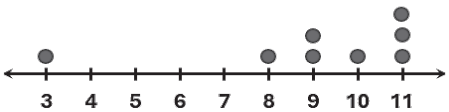
Student	*Ibrahim*	*Ammar*	*Yousif*	*Ahmed*
Mark	25	15	13	20

Homework:

Answer the following:
1) How do you calculate the range?
2) State the concept of range?
3) Find the range for the set of values 16, 14, 12, 18, 13, 10
4) Observe the box plot opposite, then find the range.



5) Observe the dot plot opposite, then find the range



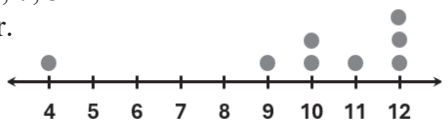
Weekly Assessment (Week……...)
(Model A)

First: Choose the correct answer from the given answers:

1) …….. = largest value - smallest value
(a) range (b) mean (c) median (d) mode

Second: Answer the following:

1) Find the median and the mode for the values: 1, 0, 3, 0, 7, 5.
2) Observe the corresponding dot plot and find the outlier.
3) From the previous dot plot find the mode?
4) Find the range for the values: 12, 10, 7, 13, 8.



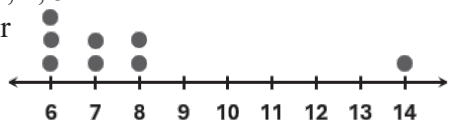
(Model B)

First: Choose the correct answer from the given answers:

1) It is a measure of spread ……..
(a) range (b) mean (c) median (d) mode

Second: Answer the following:

1) Find the median and the mode for the values: 4, 8, 6, 7, 4, 5
2) Observe the corresponding dot plot and find the outlier
3) From the previous dot plot find the mode?
4) Find the range for the set of values: 14 , 9 , 10 , 6 , 7



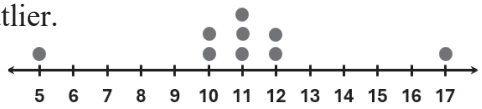
(Model C)

First: Choose the correct answer from the given answers:

1) …….. = largest value - smallest value
(a) range (b) mean (c) mode (d) median

Second: Answer the following:

1) Find the median and the mode for the values: 2, 3, 2, 4, 5, 1
2) Observe the corresponding dot plot and find the outlier.
3) From the previous dot plot find the mode?
4) Find the range for the set of values: 20, 11, 8, 7, 9



General Review

First: Choose the correct answer from the given answers:

1) If x and y are two variables, where x is an independent variable, then the equation that expresses the rule (multiply by 5) is ……..

(a) y = 5x (b) x = 5y (c) $y = \frac{5}{x}$ (d) y = x + 5

2) The number that is considered one of the solutions to the inequality x < -5 is …...

(a) 0 (b) – 1 (c) – 7 (d) – 3

3) The number 235 is divisible by the number ……..

(a) 2 (b) 3 (c) 5 (d) 10

4) Each of the following is a symbolic expression except .....

(a) 2A + 5 (b) 9 – 3B (c) 5 × 4 – 2 (d) 2x – 3

5) The number 2.3 belongs to the set of ……..numbers

(a) Counting (b) Natural (c) Integer (d) Rational

6) 0 …….. | – 8 |

(a) > (b) < (c) = (d) ≥

7) Which of the following rational numbers lies between 7.6 and 7.7?

(a) 7.61 (b) 7.59 (c) 7.7 (d) 8.51

8) 3-floors underground garage is represented by the number ……..

(a) 0 (b) 3 (c) – 3 (d) $\frac{1}{3}$

9) Which of the following represents two opposite numbers ……..

(a) -9, -9 (b) -9, 9 (c) |- 9|, 9 (d) $\frac{1}{9}$, 9

10) The number $\frac{1}{9}$ …….. The set of integers

(a) belongs to (b) does not belong to (c) subset of (d) not subset of

11) All odd numbers are not divisible by ……..

(a) 1 (b) 5 (c) 3 (d) 2

12) The mathematical expression 6m – 5y + 3 represents ……..

(a) equation (b) inequality (c) algebric expresion (d) numerical expresion

13) The further the number is from zero …….. the absolute value.

(a) vanishes (b) does not change (c) decreases (d) increases

14) All of the following numbers are integers except ……..

(a) 7 (b) -2.5 (c) 0 (d) -3

15) Which of the following rational umbers lies between $\frac{1}{3}, \frac{2}{3}$?

(a) $\frac{1}{4}$ (b) $\frac{24}{30}$ (c) $\frac{3}{6}$ (d) $\frac{2}{7}$

16) – 0.5 > ……..
(a) 0 (b) -0.2 (c) 2 (d) -1.1

17) Which of the following algebraic terms is a like term to the algebraic term 2A?
(a) 2 (b) 2A + 3 (c) 5A (d) 2V

18) The no. 5 in the algebraic expression 14S – 5S + 4 represents a(an) ……..
(a) constant (b) independent variable (c) coefficient (d) dependent variable

19) the number $\frac{1}{9}$ …….. the set of Integers
(a) belongs to (b) does not belong to (c) subset of (d) not subset of

20) All odd numbers are not divisible by ……..
(a) 1 (b) 5 (c) 3 (d) 2

21) The mathematical expression 6m – 5y + 3 represents ……..
(a) equation (b) inequality (c) algebric expresion (d) numerical expresion

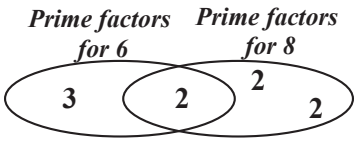
22) From the descriptive data ……..
(a) favorite color (b) weight (c) age (d) temprature

23) All of the following data are descriptive except ……..
(a) favorite food (b) marital status (c) age (d) blood type

Second: Answer the following questions:

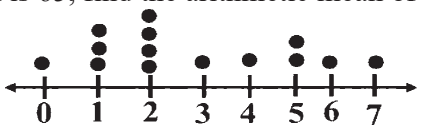
1) determine the independent In the equation y = 6 + 2x , y ?
2) What is the greatest common factor of two relative prime numbers ?
3) determine the prime factors of the number 18 ?
4) GCF for the two numbers 6, 12 ?
5) GCF for the two numbers 5, 8 ?
6) LCM for the two prime numbers ?
7) Find 7 (5 + 3)?
8) what is the number whose all prime factors are 2, 2, 3 ?
9) Find $\frac{3}{5} + \frac{1}{4}$?
10) What is the greatest negative integer ?
11) If the numbers -5.8 , A , -3.5 , -2.5 , -1.2 are arranged in descending order, What is the value of A ?

12) From the opposite Venn diagram:
Find the common factor of the two numbers 6, 8

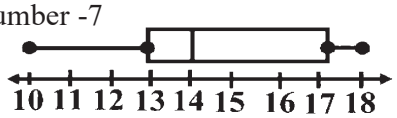


13) Find $2^3 – 6 \div (2 \times 3)$?

14) A number whose base 2 and exponent 5, Write its exponential form
15) Find the solution to the equation D + 4 = 9
16) Find the median of the values 8, 6, 3, 11 and 4
17) Mention the graph used to illustrate the five values?
18) Find the value of the expression $3x^2 + 1$ when $x = 2$
19) Mention the number of terms in the algebraic expression 4B + 3A – 5Z
20) Write 3 numbers that are both devivible by 2 and 5 together?
21) Write the like terms in the algebraic expression 5x – 2x + 3
22) Find LCM for the numbers 8 and 24
23) Find GCF and LCM for the numbers 4 and 6.
24) What is the graph that displays the data grouped into intervals?
25) Find the five values for the data set 9, 15, 17, 11, 7, 8, and then represent them with a box plot.
26) Find the range for the set of values 7, 5, 4, 6, 8, 9.
27) Write the algebraic expression expresses (half a number subtracted from it 7)
28) Find the value of y in the equation $y = 8x + 3$ if $x = \frac{1}{4}$.
29) Find the median for the data set 5, 3, 7, 2, 9, 8.
30) If the total score of 5 students in the mathematics exam is 65, find the arithmetic mean of their scores.
31) Using the corresponding dot plot, determine the range, mode, and mean



32) Write both the number before and the number after the number -7
33) Using the corresponding box diagram, write the five values.



34) Write three different Integers that solutions satisfy the inequality $x < 2$.
35) Write the fraction -0.9 in the form $\frac{a}{b}$.
36) Factorize the number 24 into its prime factors.
37) Are the two algebraic expressions $4x + 4$ and $2x + 2(x + 2)$ equivalent?
38) Marwa has 18 oranges and 12 apples and wants to distribute them equally on plates. State the largest number of plates and the contents of each plate.
39) Write the coefficient and constant of the algebraic expression 3D – 5.
40) State the outlier of the set of values 10, 13, 17, 15, 12, 45
41) Arrange the following numbers in a descending order: -9 , -7 , -15 , 3 , -11 , 0
42) State the appropriate set for each of the following numbers.

-5 , -0.3 , 16 , $\frac{3}{7}$, 0 , 2.7 , -12 , 11

43) A family has two packages of fruit. The family ate $\frac{3}{8}$ of the first package and $\frac{2}{5}$ of the second package. Find the left of each package?

44) Place the following numbers on the number line: 3.8 , $1\frac{1}{2}$, -2.25 , 0 , $-3\frac{1}{3}$

45) Find the solution set for the equation $\frac{1}{3}n = 8$.

46) Create a table, then represent the following equation graphically $y = \frac{1}{3}x$.

47) If the price of a T-shirt is 395 pounds and you have a discount of 55 pounds on any number of T-shirts purchased, write an equation that expresses this. What is the price you will pay to buy 4 T-shirts?

48) Write the inequality that expresses x is less than or equal to -5.

49) The following data shows the number of hours Diaa spends studying during a week: 0, 2, 1, 3, 2, 4, 5. Draw the box plot that represents this data.

50) Write the possible values of x if $|x| = 9$.

51) If the total price of purchasing a set of ***b*** books is 10 and the number of books is ***d***, write what the dependent and independent variables represent.

52) State the range for a data set ranging from 10 to 25.

53) Write an algebraic expression that represents 8 multiplied by the sum of n and 3

54) Find the value of the algebraic expression: $10(2x + 7)$, if $x = 1$.

55) Find the value of the numerical expression: $3^2 + 5 \times (12 - 6) - 3$

56) Find the solution set of the inequality $x > -2$ in the set of integers

57) A teacher has 275 pens. Can they be distributed equally among 6 students without any remainder? Please state the reason.

58) Ahmed goes to the gym every 3 days and Mohammed goes every 2 days. If they meet today, after how many days will they meet again?

59) A merchant distributed 36 boxes of cheese and 45 cartons of juice equally into boxes. Find the largest number of boxes the merchant can use.

60) Arrange in ascending order: 0 , - 0.5 , 3.4 , -1.7 , -3.2 , $\frac{3}{4}$.

61) Classify the following mathematical expressions into two groups: numerical expressions and symbolic expressions:

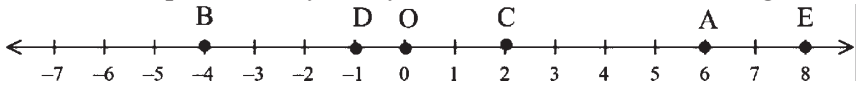
$3z + 2$, $2 \times 12 - 7$, $4v + 5$, $8 \div 2 - 1$, $c - 3$

62) Find the greatest common factor of the numbers 24 and 40.

63) Use two positive integers of your choice, then determine whether the algebraic expressions $x + 6$, $2(x + 3)$ are equivalent.

64) Shaimaa has 35 white roses and 25 red roses, and she wants to divide them into equal groups so that each group contains the same number of roses to distribute to her friends. What is the largest number of friends who will get roses? Write a numerical expression that expresses this.

65) Write the numbers represented by the symbols shown on the following number line:



66) Find the value of the mathematical expression: $2 + 3 \times [5 + (4 - 1)^2]52)$

67) Represent the following data in a histogram

Temperature	22 – 20	23 – 25	26 – 28	29 – 31	32 – 34
Frequency	5	8	10	11	7

68) Using the following frequency table, answer the questions

Temperature	22 – 20	23 – 25	26 – 28	29 – 31	32 – 34
Frequency	5	8	10	11	7

a) What is the total number of cities that recorded a temperature?

b) How many cities had a temperature of 26 degrees or higher?

c) How many cities had a temperature of less than 29 degrees?

69) Represent the following data in a histogram

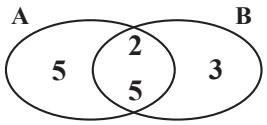
Marks	10 – 19	20 – 29	30 – 39	40 – 49
Frequency	5	10	20	15

70) If the mass of 6 students in the sixth grade of primary school is as follows:
43 kg, 40 kg, 40 kg, 39 kg, 44 kg, 40 kg. Calculate the arithmetic mean of the students' masses.

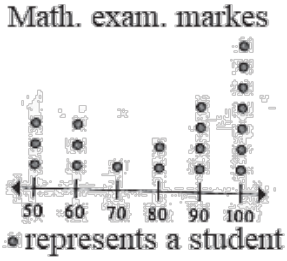
71) From the following table use the two variables x , y, where x is an independent variable, write the equation that expresses the table.

x	3	4	5	6	7
y	0	1	2	3	4

72) Using the corresponding Venn diagram, find the value of the number A and the number B, then find the GCF and LCM for the two numbers.



73) From the corresponding dot plot, determine the mode



74) Two alarms, one rings every 8 minutes and the other rings every 6 minutes. If they start working together, after how many minutes will they ring together again?

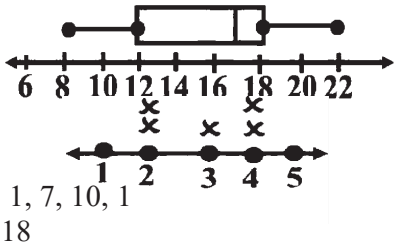
75) If a person's height to enter the Police College exams must not be less than 175 cm, mention three heights that are allowed to enter the exams.

76) Represent the solution of the inequality $x \leq -4$ on the number line on Integers.

77) Yasmine has a $\frac{3}{8}$ of cake. Her brother has a $\frac{3}{4}$ of cake. What is the total amount they have?

78) State the inverse operation used to find the value of x in the equation $5x = 20$

79) From the opposite box plot,
write the value that represents the third quartile.



80) Find the arithmetic mean for the values 8, 3, 7, 2 and 5

81) From the opposite dot plot,
write the palance point

82) Write the mode for the following set of data: 7, 2, 1, 4, 2, 1, 7, 10, 1

83) Write the range for the set of values: 2, 3, 2, 7, 11, 1, 14, 18

84) Write the first quartile for the set of values: 7, 8, 1, 9, 11, 5, 2

85) Write 3 rational numbers that lie between 2.64 and 2.65

86) Write the mode for the set of values: 40, 29, 14, 28, 25, 14, 16, 25.

87) Write the algwebraic expression that represents (the number 3 multiplied by x added 8 to this)

88) State the appropriate graph to answer, what is the most frequent interval?

89) The median for the following set of data: 4, 13, 16, 15, 13, 11

90) Write the number with a wbase 4 and an exponent 5 in exponential form.

91) Write the amount that represents the purchase of a number of books. The price of one book is 50 pounds.

92) Find the largest value if the range is 8 and the smallest value is 29.

93) Find the solution set of the equation $2x = 12$.

94) Find the value of the algebraic expression $y^3 - 7$ if $y = 2$.

95) If the largest value for a set of values is 78 and the smallest item is 37, find the range for thes values.

96) Mention two types of measures of central tendency

97) Mention 3 numbers that are divisible by both 2 and 3 together.

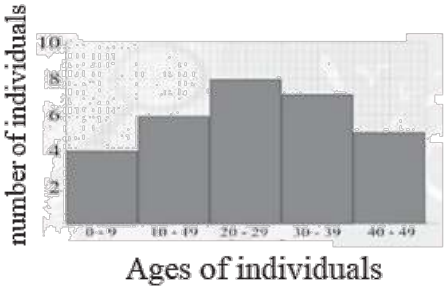
98) Mention 3 numbers that are divisible by both 3 and 5 together.

99) Write 3 possible solutions for the inequality $x < -30$.

100) An airplane can carry at most 290 passengers on one flight. Mention 3 possible possibilities for the number of people who cannot board the plane.

101) Find the value of the algebraic expression $(5 \times 9 - 2x) + 3^2$ when $x = 10$.

102) Through the corresponding histogram:
a) How many individuals are between 10 and 19 years old?
b) What is the most frequent age?



103) Mintion the two like terms in the algebraic expression $B + 8 - A + 3$

104) Find the solution to the equation $x - 12 = 9$

105) Write the relation between the number of liters of gasoline ***L*** and the cost ***C*** if the price per liter is 15.75 pounds, and state the dependent and independent variables.