

DISTRICT PUBLIC SCHOOL & COLLEGE, KASUR



Established Since 1988

Class

6th

Subject

Mathematics

Term

1st

Prepared by

Muhammad Nadeem

District Public School and College, Kasur. (1st Term)

Definitions: Class: 6th Subject: Mathematics Unit No.2

Topic: Natural and Whole Numbers

NATURAL NUMBER :

THE NUMBERS USED FOR COUNTING OBJECTS AROUND US ARE CALLED NATURAL OR COUNTING NUMBERS.

WHOLE NUMBER :

THE NUMBERS CONSISTING OF ZERO(0) AND ALL THE NATURAL NUMBERS ARE CALLED WHOLE NUMBERS.

COMMUTATIVE PROPERTY OF ADDITION:

THE SUM OF TWO NATURAL OR WHOLE NUMBERS REMAINS UNCHANGED IF THE NUMBERS INTERCHANGED THEIR PLACES. THIS PROPERTY IS CALLED COMMUTATIVE PROPERTY OF ADDITION.

COMMUTATIVE PROPERTY OF MULTIPLICATION:

THE PRODUCT OF TWO WHOLE NUMBERS REMAINS UNCHANGED IF THE NUMBERS INTERCHANGED THEIR PLACES. THIS PROPERTY IS CALLED COMMUTATIVE PROPERTY OF MULTIPLICATION.

DISTRIBUTIVE PROPERTY OF MULTIPLICATION OVER ADDITION :

THE PRODUCT OF A WHOLE OR (NATURAL) NUMBER AND THE SUM OF TWO OR MORE WHOLE OR (NATURAL) NUMBERS GROUPED TOGETHER IS EQUAL TO THE SUM OF THE PRODUCT OF THE FORMER NUMBER, AND EACH OF THE GROUPED NUMBERS. THIS IS CALLED DISTRIBUTIVE PROPERTY OF MULTIPLICATION OVER ADDITION.

DISTRIBUTIVE PROPERTY OF MULTIPLICATION OVER SUBTRACTION :

THE PRODUCT OF A WHOLE OR (NATURAL) NUMBER AND THE SUBTRACTION OF TWO OR MORE WHOLE OR (NATURAL) NUMBERS GROUPED TOGETHER IS EQUAL TO THE SUBTRACTION OF THE PRODUCT OF THE FORMER NUMBER, AND EACH OF THE GROUPED NUMBERS. THIS IS CALLED DISTRIBUTIVE PROPERTY OF MULTIPLICATION OVER ADDITION.

Prepared by: Sheikh Nadeem

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Unit No.5

INTEGER :

INTEGERS ARE AN INFINITE SERIES OF NUMBERS, BOTH POSITIVE AND NEGATIVE.

Unit No.6

RATIO :

A RATIO IS A RELATION WHICH ONE QUANTITY BEARS TO ANOTHER QUANTITY OF THE SAME KIND WITH REGARD TO THEIR MAGNITUDES.

OR

A COMPARISON BETWEEN TWO SAME QUANTITIES IS CALLED RATIO.

PROPORTION :

THE SIGN OF EQUALITY BETWEEN TWO RATIOS IS CALLED PROPORTION.

DIRECT PROPORTION :

IN DIRECT PROPORTION, AN INCREASE IN ONE QUANTITY LEADS TO A SIMILAR INCREASE IN THE OTHER QUANTITY. SIMILARLY, WHEN ONE QUANTITY DECREASES IT LEADS TO A DECREASE IN THE OTHER QUANTITY.

INVERSE PROPORTION :

IN INVERSE PROPORTION, AN INCREASE IN ONE QUANTITY LEADS TO A SIMILAR DECREASE IN THE OTHER QUANTITY. SIMILARLY, WHEN ONE QUANTITY DECREASES IT LEADS TO AN INCREASE IN THE OTHER QUANTITY.

ANTECEDENT

IN A RATIO, FIRST ELEMENT IS CALLED ANTECEDENT.

CONSEQUENT :

IN A RATIO, SECOND ELEMENT IS CALLED CONSEQUENT.

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Definitions: Class: 6th Subject: Mathematics Unit No.8

Topic: Introduction to Algebra

1. Sentence:

A sentence is a set of words or symbols that conveys some meaning.

2. Statement:

A sentence that is either true or false is known as a statement.

3. An Open Statement:

In an open statement, it is not immediately known whether the statement is true or false because not all the information is available.

4. Variable:

A variable is a symbol that represents a quantity the value of which is not known.

5. Constant:

A term that has a fixed value and appears separately from a variable is called a constant.

6. Algebraic Expression:

Any numeral, variable, or combination of numerals and variables, connected by one or more signs of fundamental operations(+ , - , × , ÷) is known as an algebraic expression.

7. Term:

The numbers or letters separated by operators in an algebraic expression are called terms.

8. Co-efficient:

The symbol or number appearing before the variable used in algebraic term is called its coefficient.

9. Like Terms:

If two terms differ only in their numerical or literal coefficients, or do not differ at all, they are called like terms.

10. Unlike Terms:

Differing terms are called unlike terms.

11. Evaluation:

The process of substituting numbers for variables in an algebraic expression to obtain the answer is called evaluation.

Prepared by: Sheikh Nadeem

District Public School and College, Kasur. (1st Term)

Definitions:

Unit No. 12

Topic: Angles

1. Angle:

An angle is formed by two different rays or line segments starting from the same point.

Or

An angle refers to the space (in degrees) between two intersecting lines or surfaces at, or close to, the point where they meet.

2. Right angle:

A right angle is of 90° . The arms of a right angle are perpendicular to each other.

3. Acute angle:

An angle less than 90° is called an acute angle.

4. Obtuse angle:

An angle more than 90° but less than 180° is called obtuse angle.

5. Reflex angle:

A reflex angle is more than 180° but less than 360° .

6. Complete angle:

An angle of 360° is called a complete angle.

7. Adjacent angles:

Two angles having a common vertex and a common arm are called adjacent angles.

8. Complementary angles:

Two angles if they are adjacent and their sum is 90° are called complementary angles.

9. Supplementary angles:

Two angles if they are adjacent and their sum is 180° are called supplementary angles.

10. Vertically opposite angles:

When two straight lines intersect, the pair of angles with a common vertex lying on opposite sides of the vertex form a pair of vertically opposite angles.

11. Linear pair:

Two angles form a linear pair if they are both supplementary and adjacent.

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District Public School and College, Kasur

Subject: Mathematics Class: 6th ----- Name:-----

Work sheet No.1 (McQ's) Home Task (Summer vacation),2020.

- The smallest natural number is ____
a. 0 b. 1 c. 2 d. 4
- The smallest whole number is ____
a. 0 b. 1 c. 2 d. 4
- $a + b = b + a$ is called _____ of addition.
a. Commutative property b. associative property c. distributive property
- $(a + b) + c = a + (b + c)$ is called _____ of addition.
a. Commutative property b. associative property c. distributive property
- If $5 \div 0 =$ _____
a. 0 b. 5 c. 1 d. none of these
- The number which is neither positive nor negative is
a. 0 b. 1 c. 2 d. 3
- On the number line which is greater -15 or -3 ?
a. -15 b. -3 c. They are equal d. None of the above
- An infinite series of numbers, both positive and negative is called
a. Integers b. sets c. algebra d. None of the above
- Multiplicative inverse of 6 is
a. -6 b. 6 c. 36 d. $\frac{1}{6}$
- There are _____ operations that can be performed on integers:
a. One b. two c. three d. four
- An increase in one quantity leads to a similar increase in the other quantity is called:
a. Direct Proportion b. Inverse Proportion c. Ratio d. Percentage
- An increase in one quantity leads to a similar decrease in the other quantity is called:
a. Direct Proportion b. Inverse Proportion c. Ratio d. Percentage
- In the proportion $4 : 5 :: 12 : 15$, the terms 4 and 15 are called the -----
a. Extremes b. Means c. Ratio
- In the proportion $4 : 5 :: 12 : 15$, the terms 5 and 12 are called the -----
a. Extremes b. Means c. Ratio
- $24 : 36 : 48$ in its simplest form will be:
a. $12 : 18 : 24$ b. $4 : 6 : 8$ c. $6 : 9 : 12$ d. $2 : 3 : 4$
- For a whole number, $a \times 3 = 215$, which of the following satisfy the equation ?
a. $a = 70$ b. $a = 71$ c. $a = 71.66$ d. No one
- Simplify $2x + y - (x + y)$
a. $x + 2y$ b. x c. $3x + 2y$ d. y
- Differing terms are called:
a. Like terms b. Unlike terms c. wrong terms d. correct terms
- The combination of numerals and variables, connected by one or more signs of fundamental operations ($+$, $-$, \times or \div) is known as :
a. An open statement b. an algebraic expression c. A sentence d. A term
- The process of substituting numbers for variables in an algebraic expression to obtain the answer is called:
a. Simplification b. Evaluation c. Grouping symbols d. No one
- Interior angle of a triangle add up to
a. 300° b. 360° c. 90° d. 180°
- Two angles if they are adjacent and their sum is 90° are called:
a. Complementary angles b. Supplementary angles c. Vertically opposite angles
- Two angles if they are adjacent and their sum is 180° are called:
a. Complementary angles b. Supplementary angles c. Vertically opposite angles
- The vertical opposite angles are always:
a. Equal b. Different c. Both a and b d. None

25. An angle more than 180° but less than 360° is called:

- a. Right angle b. Acute angle c. Obtuse angle d. Reflex angle

District Public School and College, Kasur Home Task (Summer Vacation), 2020.

Class: 6th ----- Name ----- F. Name -----

Work sheet No.2 (Fill in the blanks) -

1. The smallest even number of three digits is _____
2. If $5 \div 0 =$ _____
3. If zero is added to any number the identity of the number does not change . It is called the _____
4. The value of $5 \times (-3) - (-3)$ is -----
5. The set of integers is denoted by the capital letter -----
6. Start at 0. Turn right and move 7 steps and then take 3 steps to the left. At what number you are now. -----
7. When two ratios are equivalent, it constitutes a -----
8. Of the two terms forming a ratio, the first one is called -----
9. Of the two terms forming a ratio, the second one is called -----
10. A set of words or symbols that conveys some meaning is called -----
11. The numbers or letters separated by operators in an algebraic expression are called -----
12. A term that has a fixed value and appears separately from a variable is called -----
13. The starting point of the rays is called the ----- of the angle:
14. An angle of 90° is called -----
15. The sum of exterior angles is -----

Match the columns

Column (I)	Column (II)
1. 1 Million is equal to	{ 0,1,2,3,4,..... }
2. The additive inverse of -3 is	constant
3. "Set of Whole Numbers"	Like terms
4. Integers are also called	180°
5. The product of the extremes =	Ten lakh
6. When two ratios are equivalent, it constitutes a	360°
7. A term that has a fixed value	proportion
8. If two terms differ only in their numerical or literal coefficients, or do not differ at all, they are called:	Directed numbers
9. The sum of interior angles of a triangle is always:	+3
10. The sum of exterior angles of a triangle is always:	The product of means

District Public School and College, Kasur

Home Task (Summer Vacation),2020.

Subject: Mathematics

Class:6th

Worksheet No. 3

Subjective Type (unit No.2)

Topic : Natural Numbers And Whole Numbers

Solve these questions:

Q No.1. Find the difference between the largest odd number of three digits and the smallest even number of 3 digits.

Q No. 2. Find the value of : $542 \times 92 + 8 \times 542$

Q No. 3. Find the value of: $6 \times 612 + 4 \times 612$

Q No. 4. Find the value of: $365 \times 99 + 365$

Q No.5. which whole number succeeds 9999 ?

Q No.6. which whole number precedes 1000 ?

Q No.7. solve this: $(16 \div 4) \div 2$

Q No.8. Express the following in expanded form:

58,762

Q No.9. write the place value of each digit: 5264

Worksheet No. 4

Subjective Type (unit No.5)

Topic : integers

Solve these questions:

Q No.1. Arrange the following integers in increasing order.

3 , -5 , -2 , 1

Q No. 2. Arrange the following integers in decreasing order.

-5 , 2 , -3 , 0

Q No. 3. Write the next three integers of the following sequence:

-9 , -6 , -3

Q No. 4. Give two possible integers of the following:

> -2

Q No.5. simplify: $(-29) + (-11) + 40$

Q No.6. simplify: $(-107) - (-97) + (-10)$

Q No.7.simplify: $(-23) \times 100 \times (-10)$

Q No.8. simplify: $(-63) \div (+7)$

Q No.9. simplify: $(-231) \div (-11)$

Q No.10. Mrs Ahmad was born in 1898 and died in 1971.

How long did she live?

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Worksheet No. 4

Subjective Type (unit No.5)

Topic : integers

Solve these questions:

Q No.11. Find an integer which divides -100 to give -5

Q No. 12. The sum of two integers is -129 . If one of them is 150 , find the other.

Q No. 13. The sum of two integers is 52 . If one of them is -18 , find the other.

Q No.14. The product of two integers is -160 . If one of them is 8 , find the other.

Q No.15. subtract the sum of -11 and -18 from -23

Worksheet No. 5

Subjective Type (unit No.6)

Topic : Ratio and Proportion

Solve these questions:

Q No.1. Find the ratio of: 42 and 63

Q No.2. Find the ratio of: 60cm and 3 meters

Q No.3. Find the ratio of: 0.5meters and 75 cm

Q No. 4. Mr. Bilal has a monthly income of Rs 7200 and expenditures of Rs 6300 per month. Find the ratio of his savings to his income.

Q No. 5. Ahmad earns Rs 5400 in a month and spends Rs 4500. Find the ratio of his income to his expenditures.

Q No.6.The ratio of two quantities is 2 : 7 If the first quantity is 28, find the second.

Q No.7. The ratio of two quantities is 7 : 12 If the larger one is 84, find the other.

Q No. 8. Use the cross product rule which of the ratios is greater?

4 : 7 and 1 : 2

Worksheet No. 5

Subjective Type (unit No.6)

Topic : Ratio and Proportion

Solve these questions:

Q No.9. Use the cross product rule which of the ratios is greater

6 : 11 and 7 : 12

Q No.10. if $\frac{7}{13} = \frac{14}{p}$, find P

Q No.11. Find the fourth proportional to 2, 3, and 6.

Q No. 12. Find the mean proportional between 4 and 9

Q No.13. Two masons build a wall in 10 days. How many days will it take for 5 masons to build the same wall?

Q No.14. An author writes 6 pages in one hour. How many pages will she write in 5 hours?

Q No. 15. If shahida can iron 5 handkerchiefs in 7 minutes, how long will she take to iron 35 handkerchiefs?

Worksheet No. 6

Subjective Type (unit No.8)

Topic : introduction to Algebra

Solve these questions:

Q No.1. Replace the letter by numeral to make the statement true. $X + 2 = 9$

Q No.2. Replace the letter by numeral to make the statement true. $3y = 15$

Q No.3. write the following as algebraic expression:
The sum of p and q

Q No. 4. write the following as algebraic expression:
The difference of a and b when a is greater than b

Q No. 5. write the following as algebraic expression:
The product of m and n added to their sum

Q No.6. write down separately the terms of the following algebraic expression. $a + b - 2c$

Q No.7. write down separately the terms of the following algebraic expression. $abc + 2fgh - af^2 - bg^2 - ch^2$

Q No. 8. Write down the algebraic expression whose terms are given below: $-5abc, -7bcd, 3abd$

Q No. 9. Add the following: $2a + 3b, 3a - 4b$

Q No. 10. Add the following: $4a - 3b + 5c, -5a + 4b - c$

Worksheet No. 6

Subjective Type (unit No.8)

Topic : introduction to Algebra

Solve these questions:

Q No.11. Subtract: $3a - b + c$ from $4a + 2b - 3c$

Q No. 12. Subtract: $x - 2y - 3z$ from $2x + y + 3z$

Q No. 13. Simplify: $L + m - 3n - m + 2L + 3n + 2m$

Q No.14. what must be added to $3a^3 - 3a^2 + 3a - 1$ to get $a^3 + 3a^2 - 3a + 1$?

Q No.15. If $A = x - y + z$, $B = 2x - 3y + 4z$ and $C = 4x - 5y - 6z$, find $A + B + C$

Worksheet No. 7

Subjective Type (unit No.12)

Topic : Angles

Solve these questions:

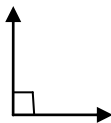
Q No.1. Define obtuse angle:

Q No.2. Define straight angle:

Q No.3. Measure the following angle:
Also name the angle



Q No. 4. Measure the following angle:
Also name the angle:



Q No. 5. Calculate how many degrees there are in:

- i) Four right angles
- ii) $\frac{2}{3}$ right angles
- iii) $\frac{1}{2}$ right angle

Q No.6. write the sizes of the complements of the following angles:

- i) 70°
- ii) 59°
- iii) 80°

Q No.7. write the sizes of the supplements of the following angles:

- i) 90°
- ii) 162°
- iii) 100°

Q No. 8. If two lines make an angle of $\frac{2}{5}$ right angle , calculate the reflex angle between them.

Q No. 9. Define reflex angle:

Q No.10. Define supplementary angles:

Worksheet No. 7

Subjective Type (unit No.12)

Topic : Angles

Solve these questions:

Q No.11. classify the angle between the hands of a clock at:

- I) 3 p.m
- II) 6 p.m
- III) 9 p.m
- IV) 1 p.m

Q No. 12. What are the sizes of the reflex angles between the hands of a clock at:

- I) 3 p.m
- II) 4 p.m
- III) 5 p.m

Q No. 13. Using your protractor draw $\angle BAC$ of size 72° . Bisect this angle using compass.

Q No.14. Draw an angle of size 120° using a protractor. Bisect it to get an angle of size 60°

Q No.15. Draw an angle of 135° using a protractor and bisect it.

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