



GRADE 8

STUDENTS' WORKSHEETS
MATHEMATICS
(November)

Academic Year
2020 - 2021



COVID-19
ACCELERATED
RESPONSE FOR
EDUCATION, PUNJAB



PUNJAB CURRICULUM AND TEXTBOOK BOARD, LAHORE

GRADE 8

STUDENTS' WORKSHEETS MATHEMATICS (November)



PUNJAB CURRICULUM AND TEXTBOOK BOARD, LAHORE

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Unit-1

WORKSHEET-1

Lesson Plan-1

BASIC ALGEBRAIC FORMULAS IMPLEMENTATION

Instruction: Read the following questions/statements carefully and solve in the given space.

Q1. Match the numbers in column A with their squares in column B in the following table.

| Column A | Column B |
|----------|----------|
| 95 | 3,249 |
| 77 | 357,604 |
| 57 | 9,025 |
| 598 | 5,929 |

Q2. Evaluate $(1997)^2$:

Q3. Evaluate:

(i). 46×54

(ii). 999×1001

Unit-1

WORKSHEET-2

Lesson Plan-2

BASIC ALGEBRAIC FORMULAS

Instruction: Read the following questions/statements carefully and solve in the given space.

Q:1. Fill in the blanks below, when $x + \frac{1}{x} = 4$

$$\left(x + \frac{1}{x}\right)^2 = (\quad)^2$$

$$x^2 + 2(\quad)(\quad) + \left(\frac{1}{x}\right)^2 = 16$$

Q:2. When $x - \frac{1}{x} = -1$ Find $x^2 + \frac{1}{x^2}$ and $x^4 + \frac{1}{x^4}$

Solution

Unit-1

WORKSHEET-3

Lesson Plan-3

FACTORIZATION

Instruction: Read the following questions/statements carefully and solve in the given space.

Q1. Fill in the blanks.

(i). $x^2y^2z + x^2yz^2 + xy^2z^2$

() ($xy + x$ $+ y$)

(ii). $5x^5 + 10x^4 + 15x^3$

$= 5x^3 ($ $+$ $+$ $)$

(iii). $77x^2y - 33xy^2 - 55x^2y^2$

$= ($ $) (7x - 3y - 5xy)$

Unit-1

WORKSHEET-4

Lesson Plan-4

FACTORIZATION

Instruction: Read the following questions/statements carefully and solve in the given space.

Q1. Factorize $x^2 + 30x + 5x + 6$

Solution

Q2. Factorize $x^2 - 13x - 2x + 26$.

Solution

Q3. Verify that $(3 + c)$ and $(x + c)$ are factors of $3x + cx + 3c + c^2$

Solution

Unit-1

WORKSHEET-5

Lesson Plan-5

FACTORIZATION

Instruction: Read the following questions/statements carefully and solve in the given space.

Q:1. Factorize

(i). $x^2 - 6x + 9$

Solution

(ii). $2a^2 - 64a + 512$

Solution

(iii). $7a^4 + 84a^2 + 252$

Solution

Unit-1

WORKSHEET-6

Lesson Plan-6

FACTORIZATION

Instruction: Read the following questions/statements carefully and solve in the given space.

Q:1. Factorize

(i). $25x^2 - 64$

Solution

(ii). $16a^2 - 400b^2$

Solution

(iii). $75 - 3(a - b)^2$

Solution

Unit-1

WORKSHEET-7

Grade 8

Lesson Plan-7

FACTORIZATION

Instruction: Read the following questions/statements carefully and solve in the given space.

Q:1. Factorize

(i). $a^2 + b^2 + 2ab - 9a^2b^2$

Solution

(ii). $x^2 - 4xy + 4y^2 - 9x^2y^2$

Solution

Unit-1

WORKSHEET-8
Lesson Plan-8

Grade 8

MANIPULATION OF ALGEBRAIC EXPRESSION

Instruction: Read the following questions/statements carefully and solve in the given space.

Q:1. Complete the following formulas:

$$(a + b)^3 =$$

$$(a - b)^3 =$$

Q:2. Find the cube of $7 + 2b$

Solution

Q:3. Evaluate $(4x - 2y)^3$

Solution

Q:4. Evaluate $(0.99)^3$

Solution

Unit-1

WORKSHEET-9
Lesson Plan-9

Grade 8

RECOGNIZE SIMULTANEOUS LINEAR EQUATION

Instruction: Read the following questions/statements carefully and solve in the given space.

Q:1. Identify number of variables in each equation and tell whether the equation is linear or not.

| No. | Equation | No. of variables | Linear / Not Linear |
|-----|---------------|------------------|---------------------|
| 1. | $x + y = 2$ | | |
| 2. | $x^2 = 5$ | | |
| 3. | $x = 2$ | | |
| 4. | $xy = 2$ | | |
| 5. | $x + y^2 = 4$ | | |

Q 2: The price of 6 biscuits is equal to the price of one chocolate. Write the equation for this statement.

Solution

Q 3: If a number is added to three times of another number, the sum is 25. Write the equation for this statement.

Solution

Unit-1

WORKSHEET-10
Lesson Plan-10

Grade 8

SOLUTION OF A LINEAR EQUATION IN TWO UNKNOWNNS

Instruction: Read the following questions/statements carefully and solve in the given space.

Q:1. Find solution sets of the equation, $x + y = 2$

Solution

Q:2. Find four solutions of the equation $2x + 7y = 16$

Solution

Q:3. Is (1,2) a solution set of $x + y = 3$ and $2x + 7y = 16$?

Solution

Unit-1

WORKSHEET-11
Lesson Plan-11

Grade 8

SOLUTION OF SIMULTANEOUS LINEAR EQUATIONS (EQUATING THE COEFFICIENTS)

Instruction: Read the following questions/statements carefully and solve in the given space.

Q:1. Find the solution set with the method of equating the coefficients

(i). $x + y = 2$
 $x - y = 0$

Solution

(ii). $3x + 5y = 5$
 $x + 2y = 1$

Solution

Unit-1

WORKSHEET-12
Lesson Plan-12

Grade 8

SOLUTION OF SIMULTANEOUS LINEAR EQUATIONS (ELIMINATION BY SUBSTITUTION)

Instruction: Read the following questions/statements carefully and solve in the given space.

Q:1. Find the solution set with the method of elimination by substitution

(i). $x + y = 2$
 $x - y = 0$

Solution

(ii). $5x - y = 6$
 $9x + 8y = 1$

Solution

Unit-1

WORKSHEET-13
Lesson Plan-13

Grade 8

SOLUTIONS OF SIMULTANEOUS LINEAR EQUATIONS (CROSS-MULTIPLICATION)

Instruction: Read the following questions/statements carefully and solve in the given space.

Q:1. Find the solution set with the method of cross-multiplication

(i). $x + y = 2$
 $x - y = 0$

Solution

(ii). $2x - 7y = 11$
 $5x - 7y = 10$

Solution

Unit-1

WORKSHEET-14
Lesson Plan-14

Grade 8

REAL LIFE PROBLEMS OF SIMULTANEOUS LINEAR EQUATIONS

Instruction: Read the following questions/statements carefully and solve in the given space.

Q:1. The cost of 2 chocolates and 7 toffees is Rs. 10 and the cost of 3 chocolates and 1 toffee is Rs. 3.
Calculate the price of 1 chocolate and 1 toffee.

Solution

Q:2. Aiman bought 3 kg apples and 4 kg bananas for Rs. 470. Ali bought 5 kg apples and 6 kg bananas for Rs. 730. Calculate the price of apples and bananas per kg.

Solution

Unit-1

WORKSHEET-15

Lesson Plan-15

ELIMINATION

Instruction: Read the following questions/statements carefully and solve in the given space.

Q:1. Eliminate 'x' from the following equations by substitution method:

(i). $2x + 3y = 5$
 $x - y = 2$

Solution

(ii). $a - b = 2x$
 $a^2 + b^2 = 3x^2$

Solution

Q:2. Eliminate v_i from the following equations. (i) $v_f = v_i + at$ (ii) $S = v_i t + \frac{1}{2} at^2$

Solution

Unit-1

WORKSHEET-16
Lesson Plan-16

Grade 8

ELIMINATION OF VARIABLES BY APPLICATION OF FORMULAS

Instruction: Read the following questions/statements carefully and solve in the given space.

Q:1. Eliminate 'x' from the following equations using appropriate formula:

(i). $x - \frac{1}{x} = \ell, x^3 + \frac{1}{x^3} = m^3$

Solution

(ii). $x - \frac{1}{x} = m, x^2 + \frac{1}{x^2} = n^2$

Solution

Unit-2

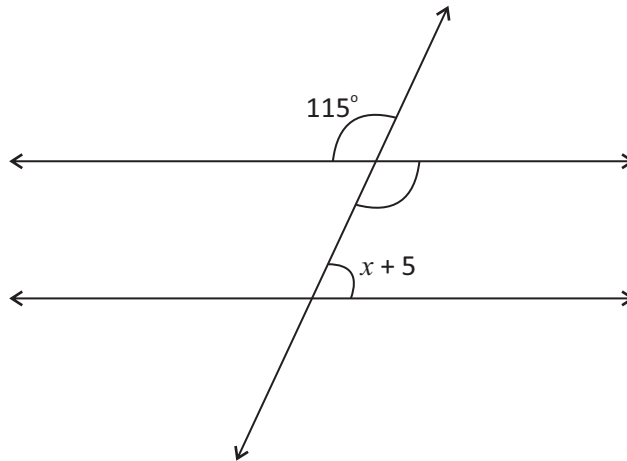
WORKSHEET-17
Lesson Plan-17

Grade 8

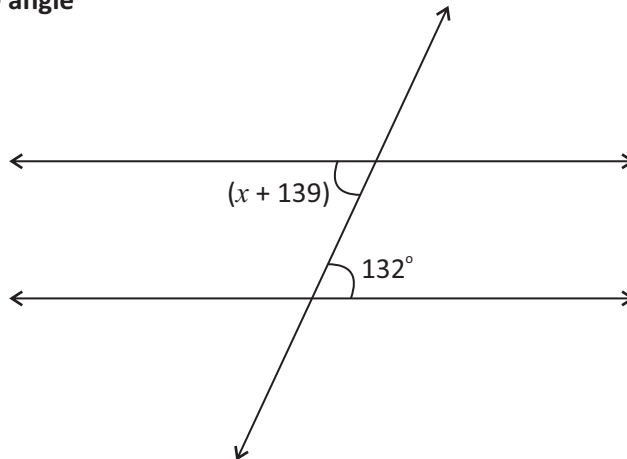
RELATION BETWEEN THE PAIR OF ANGLES WHEN A TRANSVERSAL INTERSECTS TWO PARALLEL LINES

Instruction: Read the following questions/statements carefully and solve in the given space.

Q:1. Find the value of x



Q:2. Solve for x and find the angle



$x = ?$

Required angle = $x + 139 = ?$



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