परमाणु ऊर्जा शिक्षण संस्था
Atomic Energy Education Society
कार्यपत्रक / Worksheet (2025-26)

कक्षा /Class: VIII विषय /Subject: Mathematics माह/ Month: July अंक/Marks: 40

दिया गया पाठ्यक्रम/Portion covered: Chapter 4-Expressions Using Letters-Numbers

विद्यार्थी का नाम/Name of the student: _____

अनुक्रमांक /Roll No._____ कक्षा/अनुभाग Class /Sec.:_____ दिनांक /Date: _____

GENERAL INSTRUCTIONS: -

All the questions are compulsory.

Question paper is divided into five sections A, B, C, D and E.

Calculators are not allowed.

SECTION-A [10x01=10 marks]

1 Which of the following represents "five times the sum of x and 2"? [1]

a) $5(x+2)$

b) $5x+10$

c) $5x+2$

d) $x+2\times 5$

2 Simplify:$(2x+3)+(4x-5)$ [1]

a) $6x-8$

b) $2x-2$

c) $6x-2$

d) $6x+8$

3 What does the expression 5x represent? [1]

a) x multiplied by 5

b) x added 5 times

c) 5 added$x$ times

d) 5 divided by$x$

4 Which of the following is a like term to 5x? [1]

a) $5y$

b) x

c) $3x$

d) 5

5 The expression for the perimeter of a square with side x is: [1]

a) $2x$

b) x^2

c) $x+4$

d) $4x$

6 In algebra, the multiplication sign is often omitted. How is$4\times x$ written? [1]

a) $x\times 4$

b) $4 \times x$
c) $4x$
d) $\times 4$

7 Which expression represents "three more than twice a number x"? [1]
a) $3x + 2$
b) $2x + 3$
c) $2 + 3x$
d) $x + 3$

8 Which of the following is NOT an algebraic expression? [1]
a) $3x + 2$
b) $7 - y$
c) $x^2 + 1$
d) 5×6

9 The expression$3(x + 2)$ equals: [1]
a) $x + 6$
b) $3x + 6$
c) $3x + 2x$
d) $3x + 2$

10 What is the coefficient of$x$ in the expression $7x + 3$? [1]
a) 10
b) 7
c) x
d) 3

SECTION-B [04x02=08 marks]

11 Write the algebraic expressions for the following: [2]
The sum of a number x and 9
4 less than twice a number y

12 Write an algebraic expression for: “Double a number minus 6.” [2]

13 Evaluate the expression $2x + y^2$ when x = 3 and y = 4. Show all steps clearly and explain your method. [2]

14 Expand and simplify the algebraic expression: 2(a + b) + 3a. Use appropriate algebraic properties and explain each step clearly. Also mention the name of the property used. [2]

SECTION-C [03x03=09 marks]

15 Simplify and evaluate for x = 2: [3]

$$5x + 3 - 2x + 4x - 1$$

16 A pattern shows number of dots as: [3]
1st figure = 3 dots
2nd = 6 dots
3rd = 9 dots
4th = 12 dots
Write the general term of the pattern
Find the 10th term

17 A notebook cost ₹25. Write an expression for the cost of: [3]
x notebooks
y notebooks and 1 pen that costs₹ 10

SECTION-D [01x05=05 marks]

18 A shopkeeper sells pencils at₹ 3 each, pens at ₹ 5 each, and erasers at ₹ 2 each. [5]
Write an expression for the total cost if a person buys x pencils, y pens, and z erasers.
Simplify it.
Find total cost if x = 4, y = 3, z = 5
SECTION-E [02x04=08 marks]

19. Read the following text carefully and answer the questions that follow: [4]
Shweta was solving the expression (7 + 3) × 2 - 4. She did the operations step - by - step: First bracket → (7 + 3 = 10), then multiplication → 10 × 2 = 20, and finally subtraction → 20 - 4 = 16. Her friend Rishi did not use brackets and solved 7 + 3 × 2 - 4 as 7 + 6 - 4 = 9, which gave a different answer. Their teacher explained the BODMAS rule: Brackets, Orders, Division/Multiplication, Addition/Subtraction, which must be followed to get correct results. Brackets help us group operations, and without them, the expression's meaning can change completely.
Questions:
Solve: (1)
(5 + 3) × 2
In the expression 6 + 4× 2, which operation is performed first?
(1)
Solve the expression: (6 + 2)× 5 - 3. Show the correct steps and explain why BODMAS is important. (2)
OR
If a student calculates 7 + 2 × 3 - 1 as (7 + 2) × (3 - 1), will the result be the same? Show both ways. (2)

20. Pushpita operates a flower stall. 'p' buyers purchase only champak, 'q' buyers purchase only marigold, and 'r' buyers purchase both. She gives one small flag to each customer. [4]

Questions:
Form an algebraic expression for the total number of flags distributed.[1]
If p=10, q=15, r=5, calculate the total flags.[2]
Why isn't the expression p+q+2r correct? [1]