

**Choose the correct option.**

1. Which of these is not an algebraic expression?  
 (a)  $3x$  (b)  $5y - 2$  (c)  $2 \times 3 - 2$  (d)  $2m + 3$
2. If 's' be the side of a square, its perimeter is given by  
 (a)  $s^2$  (b)  $4s$  (c)  $2s$  (d)  $2s + 2$
3. If a regular polygon has 'n' sides, its perimeter is expressed as  
 (a)  $n^2$  (b)  $4n$  (c)  $n \times s$  (d)  $n + s$
4. Twice a number decreased by 4 is written as  
 (a)  $2x + 4$  (b)  $4x - 2$  (c)  $2x - 4$  (d)  $4x + 2$
5. Find a rule which gives the number of matchsticks required to make the pattern variable to write the rule.  
 (a)  $3x$  (b)  $4x$  (c)  $5x$  (d)  $6x$

**Objective Type Questions:**

6. A symbol or letter which can be given various numerical values is called a \_\_\_\_.
7. The length of a diameter of a circle in terms of its radius  $r$  units is \_\_\_\_.
8. Expressions formed by using mathematical operations on variables and numbers are called \_\_\_\_.
9. If  $x$  is variable then  $5x$  is also variable. (True / False)
10. The value of an algebraic expression changes with the change in the value of the variable. (True / False)

**Short/ Long Questions**

11. Profit earned by a shopkeeper on selling one bottle of soft drink is Rs. 4 more than the cost price. Write an expression for the selling price.
12. The price of 1 pen is Rs. 12 and the price of 1 pencil is Rs. 5. Write an expression for the total amount payable for buying  $x$  pens and  $y$  pencils.
13. If the length and breadth of the rectangle are  $3x$  and  $2y$  respectively, then find its perimeter.
14. Radha is drawing a dot Rangoli (a beautiful pattern of lines joining dots) with chalk powder. She has 10 dots in a row. How many dots will her Rangoli have for  $r$  rows?
15. Deepak's present age is one – third his mother's present age. If the mother's age was five times his age 6 years ago, what are their present ages?

**Case Study Question**

Sarah buys books from a dealer for her bookstall. She buys 20 comic books, 15 story books and 10 colouring books. A comic book costs Rs.  $p$ , a story book costs Rs. 5 more than a comic book and a colouring book costs Rs. 10 more than a story book.

- a) Write the expression for the cost of comic books.
- b) If Sarah gets a profit of Rs. 2 on the sale of each comic book, write the expression that shows the amount Sarah earns by selling 10 comic books.
- c) Write an expression to show the total cost of 10 storybooks.
- d) If a colouring book costs Rs 50, what is the cost of the comic book?

**Source Based Question**

Ramesh is Rahul's father. Age of Ramesh is 3 times the age of Rahul. If Rahul's age is  $y$  years, answer the following questions:

- a) Find the age of Ramesh.
- b) Find the age of Rahul 5 years ago.
- c) Find the age of Ramesh after 10 years.
- d) Find the age of Ramesh 2 years ago.