

A. Choose the correct option.

1) Which of the following is not an equation with variables?

- a) $3 + 2r = 9$ b) $56 + (15 \div 3) = 61$
c) $3w - 112 < 47$ d) $5t - 8 = 0$

2) If $x + 3y = 5$ and $z = 2$, the value of $x + 3(y - z)$ is:

- a) 11 b) 1 c) -1 d) -11

3) Twice a variable subtracted from 9 is added to thrice the same variable added to 7 is written as:

- a) $(3x + 7) - (9 - 2x)$ b) $(3x - 7) + (9 - 2x)$
c) $(3x - 7) + (9 + 2x)$ d) $(9 - 2x) + (3x + 7)$

4) Which of these is equal to $15m + (-14m) + 11n$?

- a) $9m + 10n$ b) $m + 11n$
c) $m + 4n$ d) $m - 10n$

5) The number 77 when added to a product of the number k and 17, results in 89. Which of these equations represents the relation?

- a) $77 + 17k = 89$ b) $17k - 77 = 89$
c) $17(k + 77) = 89$ d) $(77 + 17)k = 89$

B. State whether true or false.

1) $y + 6$ is an equation.

2) Solving an equation means finding the value of the variable in it.

3) Solution is the value of the variable that satisfies the equation.

4) Given $x + 4 = 10$, the solution is $x = 2$

5) Given $x + 1 = 0$, the solution is $x = -1$

6) The number of sides in a square is a variable.

7) The price of onions is a variable.

C. Answer the following questions.

- 1) A car is travelling at the speed of 60 km per hour.
 - i) What is the distance covered if it travels for h hours?
 - ii) What is the time taken to cover k km?
- 2)
 - i) Write the general rule for the perimeter of a regular pentagon whose each side is t cm in length.
 - ii) What would be the general rule if each side is $2t$ cm in length?
- 3) Formulate a rule to find the perimeter of a regular nonagon (having 9 equal sides).
- 4) Generalize the associative property of multiplication of whole numbers using the variables p , q and r
- 5) Using trial and error method, find the solution of $54 = 18 + 12v$.
- 6) Gopal is 7 years younger to Gautam. If Gopal would be g years old 5 years from now, write Gautam's present age in terms of g .
- 7) Keshav has packed 6 bottles in each bag and has 1 bottle left over. Find the rule for the number of bottles he had in total, in terms of the number of bags packed. What would be the total number of bottles if he had packed 4 bags?
- 8) Abdul is 3 years younger than Salim. Nawaz is twice as old as Salim. If Salim is s years old,
 - 1) write Abdul's and Nawaz's age in terms of s .
 - 2) write Abdul's age after 14 years.
 - 3) write Nawaz's age 5 years ago.
 - 4) what is the sum of the present ages of all?
- 9) Nancy scored 8 marks more than half the marks scored by Victor. Write her marks in terms of Victor's marks. What would be her score if Victor scored
 - 1) 20 marks?
 - 2) 10 marks?In which case is her score more than Victor?
- 10) Using trial and error method, solve the following equations:
 - 1) $8d + 3 = 43$
 - 2) $3 = \frac{x}{4} + 8$