

Holiday Homework consists two parts:**Part I Worksheet****Part II Activities to be done during vacation****Part I Worksheet****A. Select the correct option:**

- Which of the following expression is a monomial ?
 (a) $3 + x$ (b) $4x^3$
 (c) $x^6 + 2x^2 + 2$ (d) None of these
- If $P(x) = x^3 - 1$, then the value of $P(1) + P(-1)$ is
 (a) 0 (b) 1
 (c) 2 (d) - 2
- The value of K for which $x - 1$ is a factor of the polynomial $4x^3 + 3x^2 - 4x + K$ is
 (a) 0 (b) 3
 (c) - 3 (d) 1
- The factors $12x^2 - x - 6$
 (a) $(3x - 2)(4x + 3)$ (b) $(12x + 1)(x - 6)$
 (c) $(12x - 1)(x + 6)$ (d) $(3x + 2)(4x - 3)$
- The expanded form of $(x + y - z)^2$ is
 (a) $x^2 + y^2 + z^2 + 2xy + 2yz + 2zx$ (b) $x^2 + y^2 - z^2 + 2xy - 2yz - 2xz$
 (c) $x^2 + y^2 + z^2 + 2xy - 2yz - 2zx$ (d) $x^2 + y^2 + z^2 + 2xy + 2yx + 2xz$
- The base of a right angled triangle is 5 cm and hypotenuse is 13 cm. Find its area.
 (a) 32.5 cm^2 (b) 60 cm^2
 (c) 30 cm^2 (d) None of these
- The measure of each side of an equilateral triangle whose area is $\sqrt{3} \text{ m}^2$ is
 (a) 8 cm (b) 2 cm
 (c) 4 cm (d) 16 cm

B. Solve the following:

- Find the values of m and n if the polynomial $2x^3 + mx^2 + nx - 14$ has $x - 1$ and $x + 2$ as the factors.
- Factorise: $x^3 - 4x^2 + 5x - 2$
- Expand $\left(\frac{1}{2}a - \frac{1}{3}b + 1\right)^2$
- Simplify: $(2x - 5y)^3 - (2x + 5y)^3$
- Evaluate each of the following using suitable identities: (i) $(104)^3$ (ii) 105×95

6. The perimeter of the triangle is 44 cm. If its sides are in the ratio 9 : 7 : 6, find its area.
7. The sides of a triangle are 8 cm, 15 cm and 17 cm. Find its perimeter and area. Also find length of the altitude of the side of length 17cm.
8. Find the area of quadrilateral ABCD whose sides are 9m, 40m, 28m and 15m, and the angle between the first two sides is a right angle.

Part II Activities to be done during vacation

1. Heron's Formula

Make the model of aircraft described in question 3 in Exercise 12.2. Also find the area of paper used to make the aircraft.

2. Data Handling

Make straws from old newspapers. Make 3 D model of a bar graph using these straws showing the week- wise number of COVID -19 patients in Maharashtra from 1st week of March to the last week of May 2020.
