STANDARD 8TH: CHAPTER 10

Division of polynomial

Q. 1. Choose the correct alternative.

1. Base of a triangle is given by $2d + 1$. If its area is $8d^2 + 4d$, find its length.
   a) 4d
   b) 6d
   c) 8d
   d) 3d

2. $(x^4 + x^3 + 7x^2 - 6x + 8) \div (x^2 + 2x + 8)$
   a) $x^2 - x + 1$
   b) $x^2 + x + 1$
   c) $x^2 - x - 1$
   d) $x^2 + x - 1$

3. What is the remainder when $27x^3 + 9x^2 - 3x - 9$ is divisible by $3x - 2$?
   a) 2
   b) 3
   c) 4
   d) 1

4. Is $x^2 + 9x - 52 = 0$ divisible by x-4?
   a) Yes
   b) No

5. If area of rectangle is $8x^2 - 2x - 15$ and $2x - 3$ is breadth what is length of the rectangle?
   a) $2x - 3$
   b) $4x + 5$
   c) $4x - 5$
   d) $2x + 3$

6. $3(x - 4) + 4(x - 3) - 5(x - 2)$ is divisible by $x - 7$
   a) True
   b) False

7. What is the quotient if $9a^2 - 42ab + 49b^2$ is divisible by $3a - 7b$?
   a) $3a + 7b$
   b) $4a + 3b$
   c) $7a - 3b$
   d) $3a - 7b$

8. What is the remainder when $3z - 6$ divides $15z^3 - 20z^2 + 13z - 12$.
   a) 54
   b) 32
   c) 0
   d) 21

9. x + 6 is a factor of $\boldsymbol{x^2 - x - 42}$
   a) True
   b) False

10. Is $7x^3 - 1$ divisible by $x + 2$
   a) Yes
   b) No

Q.2 Solve the following

1. Divide $3x^4 - 5x^2 + 3$ by $x + 2$

2. Evaluate $(4y^4 - y^3 + 2y^2) \div (-y^2)$

3. Given the polynomial p(x) = x^2 + x +5 and g(x) = x +2. Find the value of q(x) and r(x).

4. a(x) = x^3 - x^2 + x - 1 and b(x) = 2x + 1. Find the quotient polynomial and the remainder when a(x) is divided by b(x).

5. Solve by synthetic division method:
   Divide $2x^3 - 3x - 5$ *by* $x + 2$

6. Divide $x^2 + 2x + 3x^3 + 5$ by 1 + 2x + x^2.

7. If $x^2 + 3$ is one factor of $x^4 - x^2 - 12$ then what is the other factor?

8. Is $54x^3 - 686$ divisible by $3x + 7$.

9. Find the values of a and b so that $x^4 + x^3 + 8x^2 + ax + b$ is divisible by $x^2 + 1$

10. The volume of a rectangle solid is given by a polynomial $3x^4 - 3x^3 - 33x^2 + 54x$. The length of the solid is given by $3x$ and the width is given by $x - 2$. Find the height of the solid