



Studybeesofficial

Where Minds Pollinate

Class 11

Mathematics

Chapter 5

Review Exercise 5

Notes

National Book Foundation

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Review Exercise: 5

Q2) $(64y^3 - 8) \div (4y - 2)$

$$16y^2 + 8y + 4$$

$$\begin{array}{r} 4y-2 \overline{) 64y^3 - 8} \\ \underline{+ 64y^3} \\ 32y^2 - 8 \end{array}$$

$$\begin{array}{r} \phantom{4y-2 \overline{) 64y^3 - 8}} \\ \phantom{4y-2 \overline{) 64y^3 - 8}} \underline{+ 32y^2 - 16y} \\ 16y - 8 \end{array}$$

$$\begin{array}{r} \phantom{4y-2 \overline{) 64y^3 - 8}} \\ \phantom{4y-2 \overline{) 64y^3 - 8}} \underline{+ 16y - 8} \\ 0 \end{array}$$

Hence

$$16y^2 + 8y + 4$$

Answer.

Q3)

$$25y^2 + 10y + 4$$

$$\begin{array}{r} 5y-2 \overline{) 125y^3 - 8} \\ \underline{+ 125y^3 + 50y^2} \\ 50y^2 - 8 \end{array}$$

$$\begin{array}{r} \phantom{5y-2 \overline{) 125y^3 - 8}} \\ \phantom{5y-2 \overline{) 125y^3 - 8}} \underline{+ 50y^2 + 20y} \\ 20y - 8 \end{array}$$

$$\begin{array}{r} \phantom{5y-2 \overline{) 125y^3 - 8}} \\ \phantom{5y-2 \overline{) 125y^3 - 8}} \underline{+ 20y + 8} \\ 0 \end{array}$$

$$25y^2 + 10y + 4$$

Answer

Q1)

$$\begin{array}{r}
 2y^2 + y - 1 \\
 3y - 2 \overline{) 6y^3 - y^2 - 5y + 2} \\
 \underline{+ 6y^3 - 4y^2} \\
 3y^2 - 5y + 2 \\
 \underline{+ 3y^2 - 2y} \\
 -3y + 2 \\
 \underline{+ 3y - 2} \\
 0
 \end{array}$$

Hence $x = 0$

which show
 $(3y - 2)$ is a
 factor

Qs Let $x = 4$, $x = \frac{3}{5}$ & $x = -2$ are zeros

$$(x - 4) = 0, \quad 5x - 3 = 0, \quad (x + 2) = 0$$

$$(x - 4)(5x - 3)(x + 2)$$

$$P(x) = (5x^2 + 10x - 3x - 6)(x - 4)$$

$$P(x) = 5x^3 - 23x^2 + 12x + 10x^2 - 46x + 24$$

$$P(x) = 5x^3 - 13x^2 - 34x + 24$$

Answer

Q6)

$$\begin{array}{r}
 x + 12 \\
 x - 4 \overline{) x^2 + 8x + K} \\
 \underline{+ x^2 - 4x} \\
 12x + K \\
 \underline{+ 12x - 48} \\
 K + 48
 \end{array}$$

Hence $x = K + 48$.

$$\boxed{K = -48}$$

Answer

$$07) \frac{p(x)}{q(x)} = \frac{3x^2 - x + 32}{x+4} - 121$$

$$\frac{p(x)}{q(x)} = \frac{(x+4)(3x^2 - x + 32) - 121}{x+4}$$

$$\frac{p(x)}{q(x)} = \frac{3x^3 - x^2 + 32x + 12x^2 - 4x + 128 - 121}{x+4}$$

Hence dividend = $3x^3 + 11x^2 + 28x + 7$

$$\frac{p(x)}{q(x)} = \frac{3x^3 + 11x^2 + 28x + 7}{x+4}$$

Hence dividend = $3x^3 + 11x^2 + 28x + 7$

Divisor = $x+4$

Answer (Can use any method)

08

$$y^2 + 8y + 15$$

$$y-2 \overline{) y^3 + 6y^2 + y - 30}$$

$$\underline{-y^3 - 2y^2}$$

$$8y^2 - y - 30$$

$$\underline{\pm 8y^2 \pm 16y}$$

$$15y - 30$$

$$\underline{\pm 15y \pm 30}$$

$$0$$

now

$$(y+3)$$

$$y+5$$

$$y^2 + 8y + 15$$

$$\underline{\pm y^2 \pm 3y}$$

$$\frac{p(x)}{q(x)} \begin{matrix} \text{dividend} \\ \text{divisor} \end{matrix}$$

Check

$$x+4 \overline{) 3x^2 - x + 32}$$

$$\underline{-3x^3 + 12x^2}$$

$$-x^2 + 28x + 7$$

$$\underline{\pm x^2 \pm 4x}$$

$$32x + 7$$

$$\underline{-32x \pm 12}$$

$$\frac{p(x)}{q(x)} = \frac{3x^2 - x + 32}{x+4} - 121$$

$$\begin{array}{r} 5y + 15 \\ \pm 5y \pm 15 \\ \hline 0 \end{array}$$

Therefore $y+5$ is third factor