STD – 9 MATHS

CHAPTER - 2

polynomials

EXERCISE - 2.3 Q : 2,3

2. Find the remainder when $x^3 - ax^2 + 6x - a$ is divided by

$x - a$.

let $p(x) = x^3 - ax^2 + 6x - a$

$x - a = 0$

$\therefore x = a$

Remainder:

$p(a) = (a)^3 - a(a^2) + 6(a) - a$

$= a^3 - a^3 + 6a - a$

$= 5a$

3. Check whether $7 + 3x$ is a factor of $3x^3 + 7x$.

$$7 + 3x = 0$$

$$\Rightarrow 3x = -7$$

$$\Rightarrow x = \frac{-7}{3}$$

$\therefore$ **Remainder:**

$$3\left(\frac{-7}{3}\right)^3 + 7\left(\frac{-7}{3}\right) = -\left(\frac{343}{9}\right) + \left(\frac{-49}{3}\right)$$

$$= \frac{(-343 - (49)3)}{9}$$

$$= \frac{(-343 - 147)}{9}$$

$$= \frac{-490}{9} \neq 0$$

$\therefore 7 + 3x$ is not a factor of $3x^3 + 7x$

Thanks

For watching