



Factorisation of Polynomials Ex 6.4 Q10

**Answer :**

Let  $f(x) = x^3 - 3x^2 + ax - 10$  be the given polynomial.

By factor theorem,  $(x - 5)$  is the factor of  $f(x)$ , if  $f(5) = 0$

Therefore,

$$f(5) = (5)^3 - 3(5)^2 + a(5) - 10 = 0$$

$$125 - 75 + 5a - 10 = 0$$

$$5a = -40$$

$$\boxed{a = -8}$$

Hence,  $a = -8$ .

Factorisation of Polynomials Ex 6.4 Q11

**Answer :**

Let  $f(x) = 5x^3 - 7x^2 - ax - 28$  be the given polynomial.

By the factor theorem,

$(x - 4)$  is a factor of  $f(x)$ .

Therefore  $f(4) = 0$

Hence ,

$$f(4) = 5(4)^3 - 7(4)^2 - a(4) - 28 = 0$$

$$\Rightarrow 320 - 112 - 4a - 28 = 0 \Rightarrow 180 - 4a = 0 \Rightarrow a = 180/4 = 45$$

$$\text{Hence, } \boxed{a = 45}$$

Factorisation of Polynomials Ex 6.4 Q12

**Answer :**

Let  $4x^4 + 2x^3 - 3x^2 + 8x + 5a$  be the polynomial.

By the factor theorem,

$(x + 2)$  is a factor of  $f(x)$  if  $f(-2) = 0$ .

Therefore,

$$f(-2) = 4(-2)^4 + 2(-2)^3 - 3(-2)^2 + 8(-2) + 5a = 0$$

$$64 - 16 - 12 - 16 + 5a = 0$$

$$5a = -20$$

$$a = -4$$

$$\text{Hence, } \boxed{a = -4}$$

\*\*\*\*\* END \*\*\*\*\*

