

Exercise 2B

Question 18:

 $\sqrt{5}$ and $-\sqrt{5}$ are the zeros of the polynomial $x^4 + 4x^3 - 2x^2 - 20x - 15$ $\therefore (x - \sqrt{5})(x + \sqrt{5}) = x^2 - 5$ will divide the given polynomial completely.

Dividing
$$x^4 + 4x^3 - 2x^2 - 20x - 15$$
 by $x^2 - 5$, we get

Quotient =
$$x^2 + 4x + 3 = x^2 + 3x + x + 3$$

= $x(x+3) + (x+3) = (x+3)(x+1)$

Other zeros of the given polynomial are the zeros of q(x)

$$\therefore$$
 q(x) = 0 or (x+3)(x+1) = 0

$$\Rightarrow$$
 $\times = -3, -1$

Thus, the zeros of the given polynomial are $\sqrt{5}$, $-\sqrt{5}$, -3, -1

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