

6 (i) $7x$

(ii) $5x^{20} - 11$

(iii) $3x^2 - 15x + 11$

7. let $p(x) = 3x^3 - 4x^2 + 7x - 5$

$p(3) = 3 \times 3^3 - 4 \times 3^2 + 7 \times 3 - 5$

$= 81 - 36 + 21 - 5$

$= 102 - 41$

$= 61$

$p(-3) = 3(-3)^3 - 4(-3)^2 + 7(-3) - 5$

$= -81 - 36 - 21 - 5$

$= -143$

(8) $p(x) = x^2 - 4x + 3$

$p(2) - p(-1) + p(\frac{1}{2})$

$= 2^2 - 4 \times 2 + 3 - [(-1)^2 - 4(-1) + 3]$

$+ (\frac{1}{2})^2 - 4 \times \frac{1}{2} + 3$

$= 4 - 8 + 3 - (1 + 4 + 3) + \frac{1}{4} - \frac{4}{2} + 3$

$= -1 - 8 + \frac{1}{4} - 2 + 3$

$= -8 + \frac{1}{4}$

$= -\frac{32+1}{4}$

$= -\frac{31}{4}$

(9) i $p(x) = 10x - 4x^2 - 3$

$p(0) = 10 \times 0 - 4 \times 0^2 - 3$

$= 0 - 0 - 3$

$= -3$

$p(1) = 10 \times 1 - 4 \times 1^2 - 3$

$= 10 - 4 - 3$

$= 3$

$p(-2) = 10(-2) - 4(-2)^2 - 3$

$= -20 - 16 - 3$

$= -39$

9(ii) $p(y) = (y+2)(y-2)$

$p(0) = (0+2)(0-2)$

$= -4$

$p(1) = (1+2)(1-2)$

$= 3(-1)$

$= -3$

$p(-2) = (-2+2)(-2-2)$

$= 0 \times (-4)$

$= 0$

10 (i) $-3 - 3$

$= -6$

$\neq 0$

False

(ii) $3x - \frac{1}{3} + 1$

$= -1 + 1$

$= 0$

True

(iii) $4 - 5x - \frac{4}{5}$

$= 4 + 4$

$= 8$

$\neq 0$

False