Class 10 Mathematics · Chapter 2: Polynomials

Worksheet · 20 marks · about 40 minutes · based on NCERT

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1. The zero of the linear polynomial $5x + 4$ is [1]

(a) $-\frac{4}{5}$ (b) $\frac{4}{5}$

(c) $-\frac{5}{4}$ (d) 4

2. The degree of the polynomial $3 - 5y + 2y^4 - y^2$ is [1]

(a) 2 (b) 4

(c) 3 (d) −5

3. If $p(x) = 2x^2 - 5x + 3$, then $p(-2)$ equals [1]

(a) 5 (b) 1

(c) 21 (d) −5

4. The graph of $y = -3x^2 + x + 5$ is a parabola that [1]

(a) opens upwards (b) opens downwards

(c) is a straight line (d) opens upwards because the constant term is positive

5. $ax^3 + bx^2 + cx + d$, with a, b, c, d real, is a cubic polynomial provided [1]

(a) $a \neq 0$ (b) $d \neq 0$

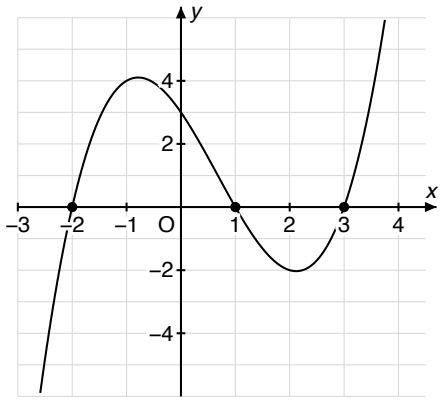
(c) $b \neq 0$ and $c \neq 0$ (d) a, b, c and d are all non-zero

6. If −2 is a zero of $3x^2 + kx - 10$, find k and the other zero. [2]

7. Find a quadratic polynomial, with integer coefficients, the sum and product of whose zeroes are $-\frac{3}{2}$ and −1 respectively. [2]

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8. The graph of y = p(x) is shown. (a) How many zeroes has p(x)? (b) Write them. (c) What is the least possible degree of p(x)? [2]



9. If α and β are the zeroes of $x^2 - 5x + 2$, find a quadratic polynomial whose zeroes are $\frac{1}{\alpha}$ and $\frac{1}{\beta}$. [3]

10. Find the zeroes of $4x^2 + 20x + 25$, verify the relationship between the zeroes and the coefficients, and state at how many points the graph of $y = 4x^2 + 20x + 25$ meets the x-axis. [3]

11. If α and β are the zeroes of $2x^2 - 6x + 3$, find without finding the zeroes: (a) $\alpha^2 + \beta^2$ (b) $\frac{\alpha}{\beta} + \frac{\beta}{\alpha}$. [3]