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Multiple Choice Questions

1. If the zeroes of the quadratic polynomial $x^2 + (a + 1)x + b$ are 2 and –3, then —

(a) $a = 0, b = -6$
(b) $a = 5, b = -1$
(c) $a = -7, b = -1$
(d) $a = 2, b = -6$

2. A quadratic polynomial whose zeroes are 3 and – 2, is :

(a) $x^2 + x + 6$
(b) $x^2 - x - 6$
(c) $2x^2 - x - 12$
(d) $x^2 + x - 6$

3. If α and β ($\alpha > \beta$) are the zeroes of the polynomial $-x^2 + 8x + 9$, then $(\alpha - \beta)$ is equal to–

(a) ± 10
(b) 10
(c) 8
(d) – 10

4. If the sum and the product of zeroes of a quadratic polynomial are $2\sqrt{3}$ and 3 respectively, then a quadratic polynomial is :

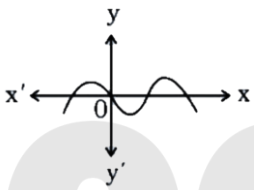
(a) $\left(x-\sqrt{3}\right)^2$
(b) $x^2 + 2\sqrt{3x} + 3$
(c) $x^2 + 2\sqrt{3}x - 3$
(d) $x^2 - 2\sqrt{3}x - 3$

5. If α and β are zeros of $x^2 + 5x + 8$, then the value of $(\alpha + \beta)$ is :

(a) – 8
(b) 8
(c) 5
(d) –5

6. In the given figure, graph of a polynomial p(x) is given. Number of zeroes of p(x) is :

(a) 2
(b) 4
(c) 3
(d) 5



7. If one zero of the polynomial $x^2 - 3kx + 4k$ be twice the other, then the value of k is :

(a) – 2
(b) 1/2
(c) – 1/2
(d) 2

8. The zeros of the polynomial $x^2 - 2x - 3$ are —

(a) – 3, 1
(b) 3, – 1
(c) 3, 1
(d) – 3, – 1

9. A quadratic polynomial, whose zeros are 5 and – 8 is —

(a) $x^2 + 4x - 3$
(b) $x^2 + 3x - 40$
(c) $x^2 + 13x - 40$
(d) $x^2 - 3x - 40$

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10. **The quadratic polynomial, the sum of whose zeroes is 5 and their product is 6, is:**

(a) $x^2 + 5x + 6$ (b) $x^2 - 5x - 6$

(c) $-x^2 + 5x + 6$ (d) $x^2 - 5x + 6$

Fill in the blanks :

11. If $p(x) = x^2 + 4x - k$ and one zero of polynomial is -7 then value of k is _____ .

12. A quadratic polynomial has _____ zeroes.

True / False

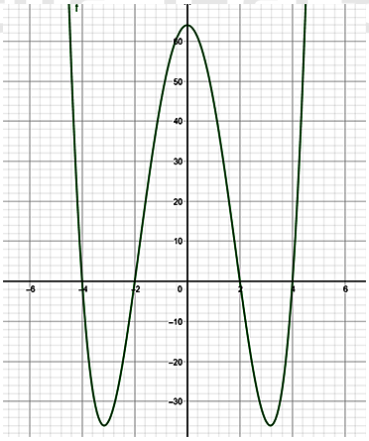
13. The degree of a constant polynomial is 0.

14. A polynomial of degree 3 can have at most 4 zeroes.

Very Short Type Questions

15. Find the zeroes of the polynomial $x^2 + 4x - 12$.

16. For a polynomial p(x), the graph of y = p(x) is given below. Find the number of zeroes of p(x).



Short Type Questions

17. Sum and product of zeroes of quadratic polynomial are 5 and 17 respectively. Find the polynomial.

18. If the sum of the zeroes of the quadratic polynomial $p(y) = (ky)^2 + 2y - 3k$ is equal to twice their product, find the value of k.

Essay Type Questions

19. Find the zeroes of quadratic polynomial $4u^2 + 8u$ and verify the relationship between the zeroes and their coefficients.

20. If α and β are the zeros of the quadratic polynomial $f(x) = x^2 - 2x + 3$, find a polynomial whose roots are $\alpha + 2$, $\beta + 2$.

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HOTS

21. If α and β are the zeroes of polynomial $p(x) = 3x^2 + 2x + 1$, find the polynomial whose zeroes are $\frac{1-\alpha}{1+\alpha}$ and $\frac{1-\beta}{1+\beta}$.

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1. (a) a = 0 b = – 6

2. (b) $x^2 - x - 6$

3. (b) 10

4. (a) $x^2 - \sqrt{3}$

5. (d) – 5

6. (b) 4

7. (d) 2

8. (b) 3, – 1

9. (b) $x^2 + 3x - 40$

10. (a) $x^2 + 5x + 6$

11. k = 21

12. 2

13. True

14. False

15. $p(x) = x^2 + 4x - 12$

Zeroes of the polynomial are – 6 and 2

16. The number of zeroes is 4 as the graph given in the question intersects the x–axis at 4 points.

17. Sum of zeroes = 5

Product of zeroes = 17

Quadratic polynomial = $x^2 - 5x + 17$

18. $p(y) = (ky)^2 + 2y - 3k$

$k = \frac{1}{3}$

20. Given polynomial is $f(x) = x^2 - 2x + 3$

$x^2 - 6x + 11$

21. Since α and β are the zeroes of polynomial $3x^2 + 2x + 1$.

$x^2 - 2x + 3$

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