Foundation

Udaan 2025
Maths
Polynomials DHA - 01

Q 1 Which of the following is a polynomial?

(A) $x^2 + \frac{1}{x}$ (B) $2x^2 - 3\sqrt{x} + 1$

(C) $x^2 + x^{-2} + 7$ (D) $3x^2 - 3x + 1$

Q 2 A polynomial of degree 2 is called

(A) linear polynomial

(B) quadratic polynomial

(C) cubic polynomial

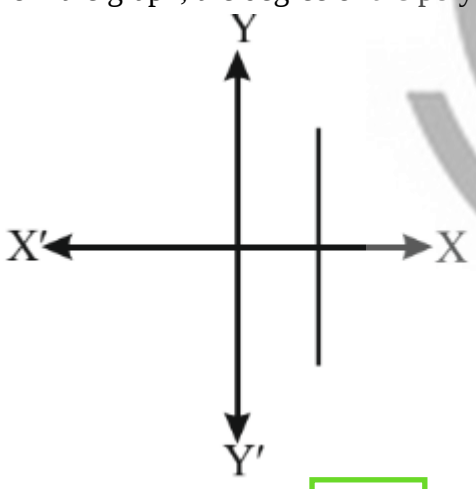
(D) biquadratic polynomia

Q 3 The maximum number of zeroes of a cubic polynomial are

(A) 0 (B) 1

(C) 2 (D) 3

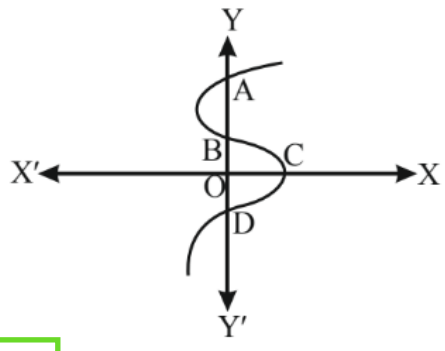
Q 4 From the graph, the degree of the polynomial is



(A) 0 (B) 1

(C) 2 (D) 3

Q 5 In figure, the graph of a polynomial p(x) is shown. The number of zeroes of p(x) is

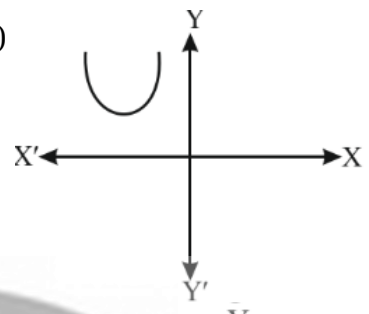


(A) 1 (B) 2

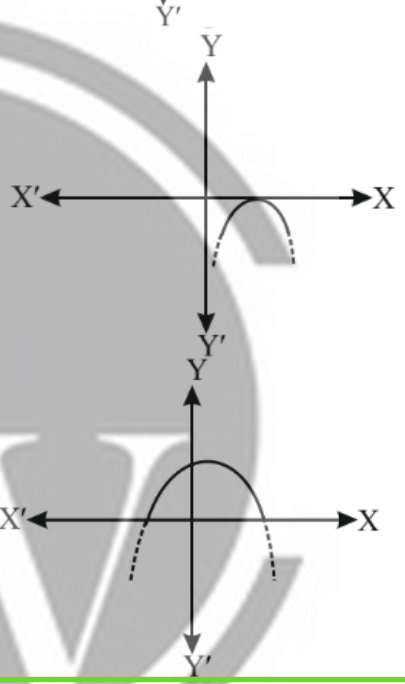
(C) 3 (D) 4

Q 6 Which of the following is not the graph of a quadratic polynomial ?

(A)

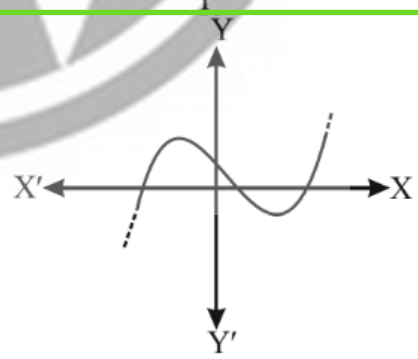


(B)



(C)

(D)



Q 7 The graph of the polynomial f(x) = 2x – 5 is a straight line which intersects the x-axis at exactly one point namely?

(A) $\left(\frac{-5}{2}, 0\right)$ (B) $\left(0, \frac{-5}{2}\right)$

(C) $\left(\frac{5}{2}, 0\right)$ (D) $\left(\frac{5}{2}, \frac{-5}{2}\right)$

Q 8 If one of the zeroes of the quadratic polynomial $(k-1)x^2 + kx + 1$ is -3 , then the value of k is

(A) $-\frac{4}{3}$ (B) $\frac{4}{3}$

(C) $\frac{2}{3}$ (D) $-\frac{2}{3}$

Q 9 Find the value of $ax^2 + bx + c$ at $x = -\frac{b}{a}$.

(A) a (B) $b^2 - 4ac$

(C) c (D) b

Answer Key

Q1	**D**
Q2	**B**
Q3	**D**
Q4	**B**
Q5	**A**
Q6	**D**
Q7	**C**
Q8	**B**
Q9	**C**

Hints & Solutions

Q 1 **Text Solution:**

$3x^2 - 3x + 1$

Video Solution:

Q 2 **Text Solution:**

quadratic polynomial

Video Solution:

Q 3 **Text Solution:**

General form of a cubic polynomial=

$ax^3 + bx^2 + cx + d$

Since, the degree of the polynomial is 3,

The cubic polynomial gives a maximum of 3 zeroes.

Video Solution:

Q 4 **Text Solution:**

Since graph cuts x-axis at one point, so, it has one zero.

Video Solution:

Q 5 **Text Solution:**

Since the graph cuts x-axis at only one point, the given graph have only one zero.

Video Solution:

Q 6 **Text Solution:**

Since, it cuts the x-axis at 3 points.

Video Solution:

Q 7 **Text Solution:**

2x – 5 = 0

$x = \frac{5}{2} = \left(\frac{5}{2}, 0\right)$

Video Solution:

Q 8 **Text Solution:**

Put x = –3 in polynomial in the given polynomial

$p\left(-3\right) = 0$

$\Rightarrow \left(k-1\right)(-3)^2 + k\left(-3\right) + 1 = 0$

$\Rightarrow 9k - 9 - 3k + 1 = 0$

$\Rightarrow 6k - 8 = 0$

$\Rightarrow 6k = 8$

$\Rightarrow k = \frac{8}{6} = \frac{4}{3}$

Video Solution:

Q 9 **Text Solution:**

Put $x = \frac{-b}{a}$ in polynomial

then,

$\Rightarrow a\left(\frac{-b}{a}\right)^2 + b\left(\frac{-b}{a}\right) + c$

$\Rightarrow a\left(\frac{b^2}{a^2}\right) - \frac{b^2}{a} + c$

$\Rightarrow \frac{b^2}{a} - \frac{b^2}{a} + c = c$

Video Solution: