Practice Questions - Term I

Date: 11/11/2021

Subject: Mathematics

Topic : Polynomials Class: X

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1. Identify the cubic polynomials among the following.

   1. $2x^3 + 3x^2 + 2x + 1$
   2. $x^3 + 2x + 3$
   3. $\sqrt{3}x + 5$
   4. $y + \sqrt{2}$

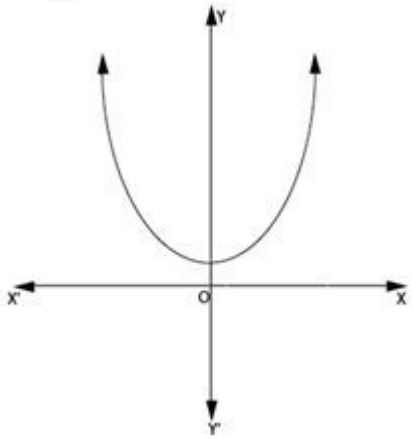
   A. 1,2 and 3

   B. 3 and 4

   C. 2 and 3

   D. 1 and 2

2. The graph of a polynomial P(x) is as shown. The number of zeroes is/are



   A. 2

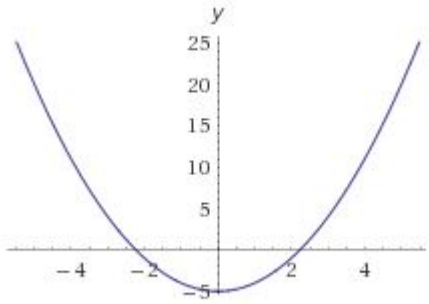
   B. 1

   C. 0

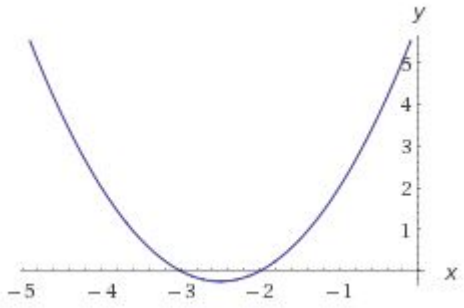
   D. 3

3. Which of the following graph represents the quadratic polynomial $-x^2 + 5x - 6$?

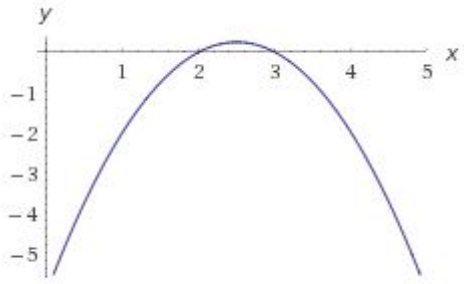
A.



B.



C.



D. Cannot be represented on a graph.

4. The zeros of the polynomial $x^2 - \sqrt{2}x - 12$ are _____

A. $\sqrt{2}, -\sqrt{2}$

B. $3\sqrt{2}, -2\sqrt{2}$

C. $3 - \sqrt{2}, 2\sqrt{2}$

D. $3\sqrt{2}, 2\sqrt{2}$

5. If a and b are the zeroes of a polynomial $px^2 - 5x + q$, then find the values of p and q, if $a + b = ab = 10$.

   A. 5 and $\frac{1}{2}$

   B. 5 and 2

   C. $\frac{1}{2}$ and 5

   D. 10 and 1

6. What is the maximum number of times the graph of the polynomial $y = px^3 + qx^2 + rx + s$ intersects the x axis?

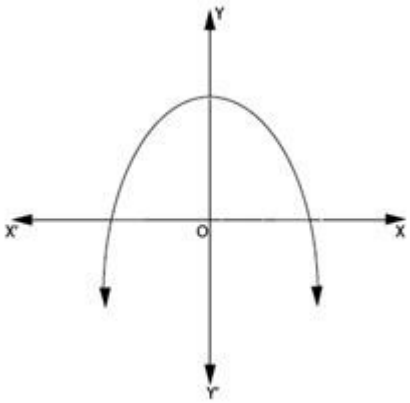
   A. 1

   B. 2

   C. 4

   D. 3

7. According to the graph below, the product of the zeroes of the polynomial will be



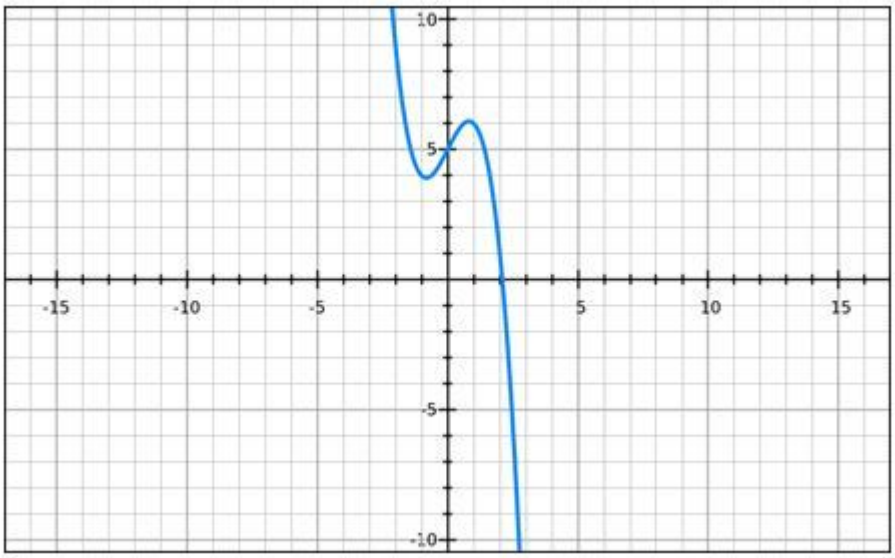
   A. positive

   B. negative

   C. zero

   D. cannot be determined

8. The graph of y = p(x) is given. The number of zeroes of y = p(x) is___.



A. 0

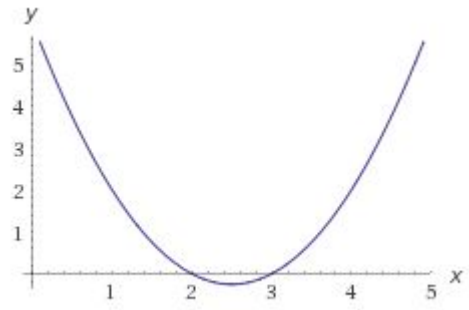
B. 1

C. 2

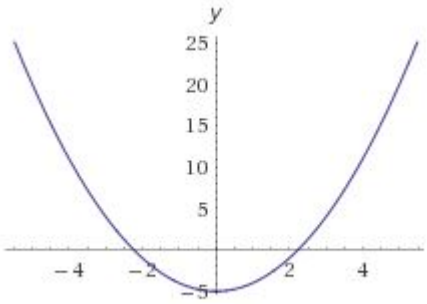
D. 3

9. Which of the following graph represents the quadratic polynomial $-x^2 + 5x - 6$?

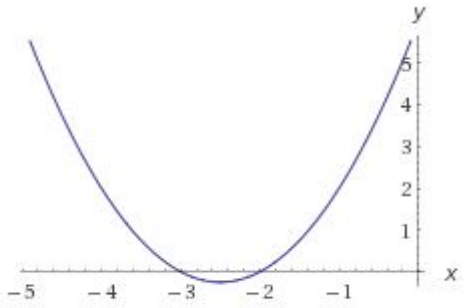
A.



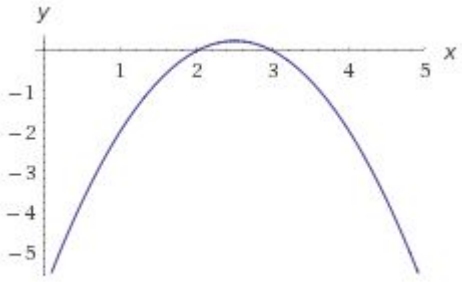
B.



C.



D.



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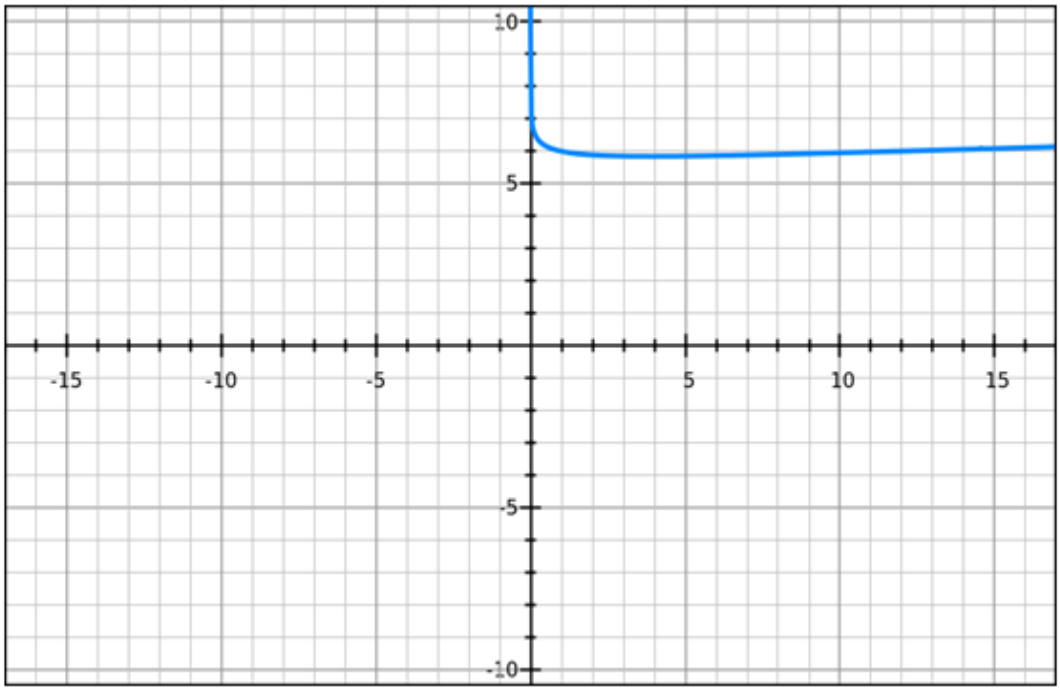
10. The graph of y = p(x) is given. How many zeroes can exist? Assume that the p(x) is always increasing beyond x = 10.



A. 0

B. 1

C. 2

D. 3

11. If x = 2 and x = 1 are the zeroes of the quadratic polynomial $ax^2 - 3x + b$, then find the value of a - b.

A. 0

B. 1

C. - 1

D. 2

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12. If the sum of the zeroes of the polynomial $9x^2 - kx + 2$ is $\frac{11}{9}$ find the value of k.

A. -1

B. 1

C. -4

D. 4

13. Find a cubic polynomial whose zeroes are 2, - 3 and 4.

A. $x^3 - 3x^2 - 10x + 24$

B. $x^3 - x^2 - x + 2$

C. $x^3 + x^2 + x$

D. $2x^3 + x^2 + 1$

14. Find the quadratic polynomial whose sum of its zeroes (roots) is $-\frac{8}{5}$ and the product of the zeroes (roots) is $\frac{7}{5}$.

A. $14x^2 + 7x + 5$

B. $5x^2 + 8x + 7$

C. $2x^2 - 8x + 7$

D. $5x^2 - 8x + 7$

15. If α, β and γ are the zeros of the polynomial $2x^3 - 6x^2 - 4x + 30$, then the value of $(\alpha\beta + \beta\gamma + \gamma\alpha)$ is

A. 2

B. -2

C. 1

D. 3

16.

Polynomials are everywhere. It is found in the slope of a hill, the curve of a bridge or the continuity of a mountain range.

Based on the given information, answer the following question.

If the equation of the bridge is prepersented by the following graph $y = p(x)$, then name the type of the polynomial it traces.

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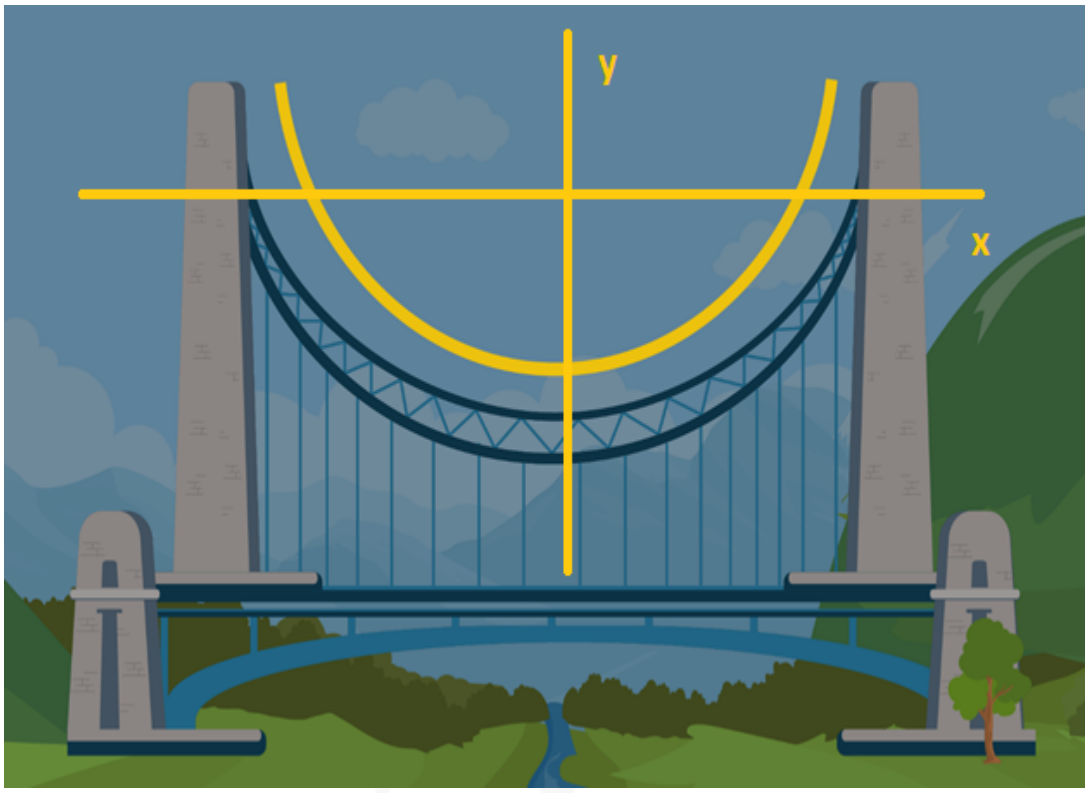

A. Linear

B. Quadratic

C. Cubic

D. Bi-quadratic

17.

Polynomials are everywhere. It is found in the slope of a hill, the curve of a bridge or the continuity of a mountain range.

Based on the given information, answer the following question.

If the hills are represented by the cubic polynomial $t(x) = px^3 + qx^2 + rx + s$, then which of the following is always true?

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A. $s \neq 0$

B. $r \neq 0$

C. $q \neq 0$

D. $p \neq 0$

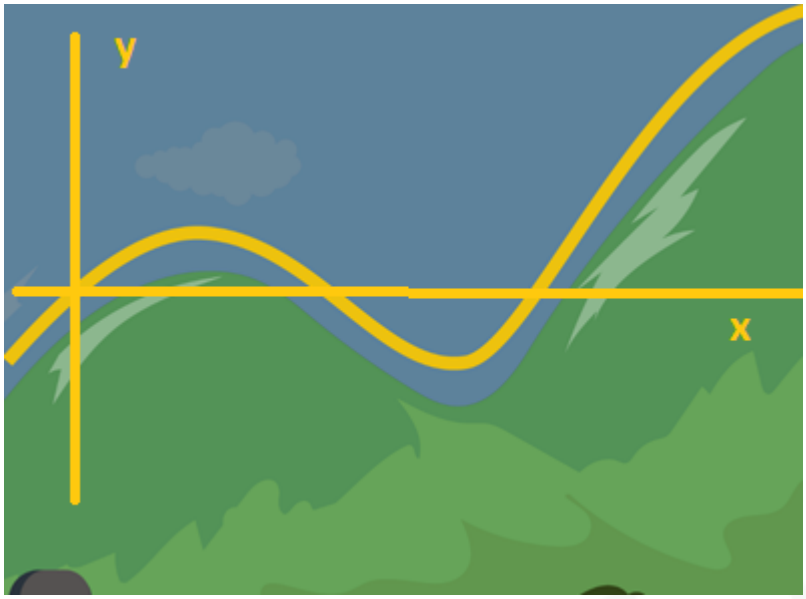
18.

Polynomials are everywhere. It is found in the slope of a hill, the curve of a bridge or the continuity of a mountain range.

Based on the given information, answer the following question.

If the path traced by the hills is represented by the graph $y = p(x)$ below,

find the number of zeroes.



A. 0

B. 1

C. 2

D. 3

19.

Polynomials are everywhere. It is found in the slope of a hill, the curve of a bridge or the continuity of a mountain range.

Based on the given information, answer the following question.

Find a quadratic polynomial for the bridge if 6 is the sum and 8 is the product of its zeroes.

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A. $x^2 + 6x + 8$

B. $x^2 - 6x + 8$

C. $x^2 + 6x - 8$

D. $x^2 - 6x - 8$

20.

Polynomials are everywhere. It is found in the slope of a hill, the curve of a bridge or the continuity of a mountain range.

Based on the given information, answer the following question.

If the hills are prepresented by the cubic polynomial
$t(x) = 2x^3 + 8x^2 + 9x + 16$, then the product of the zeroes is:

A. -4

B. $\frac{9}{2}$

C. -8

D. 8