1. The zeroes of the polynomial $x^2 + 5x + 6$ are :
   (A) 2, 3 (B) 3, $-$ 2 (C) $-$ 3, $-$ 2 (D) $-$ 3, 2

2. If the product of the zeroes of the quadratic polynomial $5x^2 + 7x + k$ is 2/5 , then the value of k is :
   (A) $-$ 2 (B) 3 (C) 5 (D) 2

3. Find a quadratic polynomial each of whose zeroes is respectively twice the zeroes of the polynomial $2x^2 - 5x + 2$.

4. If one zero of the polynomial $x^2 - 6x + b$ is twice the other, find the value of b. Also, find the zeroes of the polynomial so obtained. (errore-eraser)

5. Find the zeroes of the polynomial $4\sqrt{3}x^2 + 5x - 2\sqrt{3}$ and verify the relationship between the zeroes and its coefficients.

6. If 1 is a zero of the polynomial $x^2 + ax + 2$, then 'a' is :
   (A) 5 (B) 3 (C) $-$ 3 (D) $-$ 5

7. If one zero of the polynomial $(k - 2)x^2 - 10x + 3$ is reciprocal of the other, then the value of 'k' is : (errors -eraser)
   (A) 3 (B) 5 (C) $-$ 5 (D) $-$ 3

8. For what value of k,the product of zeroes of the polynomial kx^2-4x-7 is 2 ?

9. If one of the zeroes of the quadratic polynomial $(\alpha-1)x^2+\alpha x+1$ is -3, then the value of α is:

10. A 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)$-x^2+5x+6$ (errore- eraser)

11. The zeroes of the polynomial $3x^2+11x-4$ are:

12. Zeroes of the quadratic polynomial x^2-3x+2 are α and β.Construct a quadratic polynomial whose zeroes are $2\alpha+1$ and $2\beta+1$.

13. Find the zeroes of the polynomial $4x^2-4x + 1$ and verify the relationship between the zeroes and the coefficients. (errors - eraser)

14. The zeroes of the polynomial $3x^2 - 5x - 2$,are :

15. Zeroes of the quadratic polynomial $x^2 +x - 6$ are 'α'and'β'.Construct A quadratic polynomial whose zeroes are 1/α and 1/β. (errors. eraser)
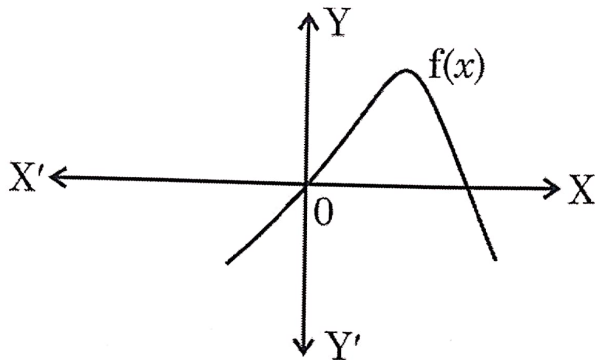
16. Find the zeroes of the polynomial $2x^2 + 3x - 2$ and verify the Relationship between the zeroes and the coefficients.

17. The zeroes of the polynomial $3x^2 + 8x - 3$ are :

18. 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) $x^2 + x + 6$ (errors-eraser)

19. In the given figure, graph of a polynomial f(x) is shown. The number of zeroes of polynomial f(x) is :

20. Find the zeroes of the quadratic polynomial $5x^2 + 3x - 2$ and verify the relationship between the zeroes and the co-efficients. (errors-eraser)

21. A quadratic polynomial whose zeroes are –8 and 3, is
    (A) $(x +8)(x +3)$ (B) $x^2 +5x +24$
    (C) $(x - 8)(x - 3)$ (D) $x^2 +5x - 24$

22. If the two zeroes of a quadratic polynomial are $\pm \sqrt{5}$, then the quadratic polynomial is :
    (A) $x^2 + 5$ (B) $(x + \sqrt{5})^2$
    (C) $4(x^2 - 5)$ (D) $x^2 - \sqrt{5}$ (errors-eraser)

23. If one zero of the polynomial $x^2 - 8x + k$ exceeds the other by 2, then find the zeroes and the value of k.

24. If one zero of a quadratic polynomial $kx^2 + 4x + k$ is 1, then the value of k is :
    (A) 2   (B) – 2   (C) 4   (D) – 4 (errors-eraser)

25. The number of quadratic polynomials having zeroes –1 and 3 is :
    (A) 1   (B) 2   (C) 3   (D) more than 3

26. If α, β are zeroes of the polynomial $8x^2 + 14x + 3$, then find the value of $(1/\alpha + 1/\beta)$. (errors-eraser)

27. Find a quadratic polynomial whose zeroes are – 9 and 6.

28. What should be added to the polynomial $x^2 - 5x + 4$, so that 3 is a zero of the resulting polynomial ?
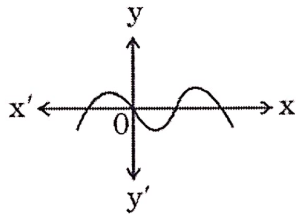   (A) 1 (B) 2 (C) 4 (D) 5

29. If a, b are zeroes of the quadratic polynomial $2x^2 + 7x + 5$, then find the value of $a^2 + b^2 + ab$.

30. If one zero of the quadratic polynomial $6x^2 + 37x - (p - 2)$ is reciprocal of the other, then find the value of p. *(errors-eraser)*

31. Degree of a zero polynomial is :
    (a) 0 (b) 1 (c) any real number (d) not defined

32. A quadratic polynomial having zeroes 7 and 0 is :
    (a) $x(x^2 - 7)$ (b) $7x^2-1$ (c) $1/7(x^2-x)$ (d) $7(x^2-7x)$

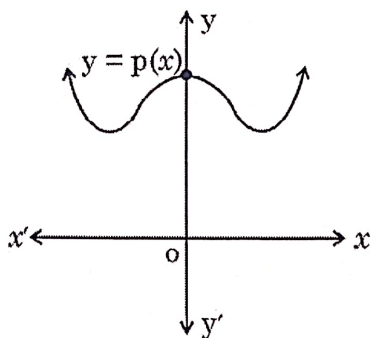33. In the given figure, graph of a polynomial p(x) is given. Number of zeroes of p(x) is : *(errors-eraser)*

34. Sum of the zeroes of the quadratic polynomial $x^2-7x+10$ is :

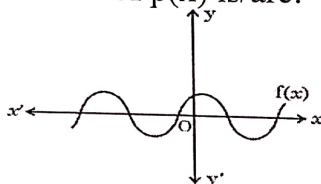35. If the zeroes of the polynomial $P(x)=5x^2-26x+k$ are reciprocal of each other, then the value of k is :

36. The sum and the product of the zeroes of the polynomial x^2+5x+6 are respectively : *(errors-eraser)*

37. If a,b are zeroes of the quadratic polynomial x^2+3x+2 ,find a quadratic polynomial whose zeroes are a+1 , b+1.
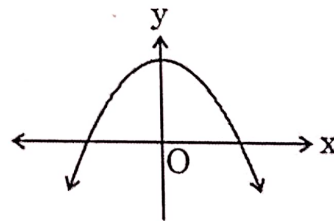
38. The graph of $Y = P(x)$ is shown in the figure for some polynomials p(x). The number of zeroes of p(x) is/are: *(errors-eraser)*

39. The graph of $Y = P(x)$ is shown in the figure for some polynomials p(x). The number of zeroes of p(x) is/are: *(errors-eraser)*
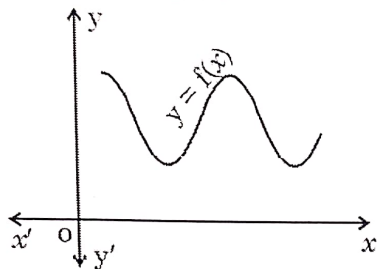
40. Find the value of 'k' such that the polynomial $p(x) = 3x^2 + 2kx + x - k - 5$ has the sum of zeroes equal to half of their product.

41. a,b are the zeroes of the quadratic polynomial $p(x) = x^2 - 8x + k$, such that $a^2 + b^2 = 40$. Find the value of k.

42. If (-3) is one of the zeroes of the polynomial $(k-1) x^2 + kx + 1$, find the value of k.
(errors. eraser)

43. A quadratic polynomial the sum and product of whose zeroes are -3 and 2 respectively, is :
    (a) $x^2 + 3x + 2$ (b) $x^2 - 3x + 2$ (c) $x^2 - 3x - 2$ (d) $x^2 + 3x - 2$

44. If $p(x) = x^2 + 5x + 6$, then $p(-2)$ is :
    (a) 20 (b) 0 (c) -8 (d) 8

45. If α, β are zeroes of the quadratic polynomial $x^2 - 5x + 6$, form another quadratic polynomial whose zeroes are $(1/\alpha, 1/\beta)$.
(errors - eraser)

46. The number of polynomials having zeroes -3 and 4 is :
    (a) 1 (b) 2 (c) 3 (d) more than 3

47. Rainbow is an arch of colours that is visible in the sky after rain or when water droplets are present in the atmosphere. The colours of the rainbow are generally, red, orange, yellow, green, blue, indigo and violet. Each colour of the rainbow makes a parabola. We know that any quadratic polynomial $p(x) = ax^2 + bx + c$ $(a \neq 0)$ represents a parabola on the graph
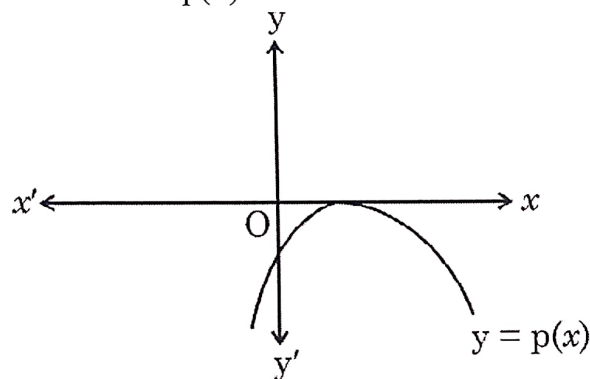*(errors . eraser)*

Based on the above, answer the following questions :
(i) The graph of a rainbow $y = f(x)$ is shown in the figure. Write the number of zeroes of the curve.
(errors - eraser)
(ii) If the graph of a rainbow does not intersect the x-axis but intersects y-axis at one point, then how many zeroes will it have ?
(iii) (a) If a rainbow is represented by the quadratic polynomial $p(x) = x^2 + (a + 1) x + b$, whose zeroes are 2 and -3, find the value of a and b. *(errors - eraser)*
OR
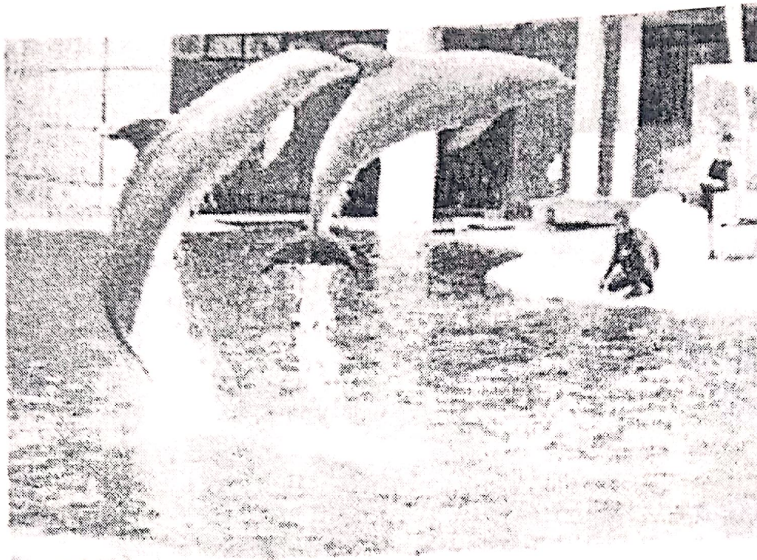(iii) (b) The polynomial $x^2 - 2x - (7p + 3)$ represents a rainbow. If -4 is a zero of it, find the value of p.

48. The graph of Y = P(x) is shown in the figure forsome polynomials p(x). The number of zeroes of p(x) is/are:

49. The graph of Y = P(x) is shown in the figure forsome polynomials p(x). The number of zeroes of p(x) is/are: (errors - eraser)

$y = p(x)$

50. If one zero of the polynomial $6x^2 + 37x-(k-2)$ is reciprocal of the other, then what is the value of k ?

51. If α and β are the zeroes of the quadratic polynomial $p(x) = x^2-ax-b$, then the value of $\alpha^2 + \beta^2$ is :

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

53. If α and β are the zeroes of the quadratic polynomial $p(x) =ax^2-5x+c$, and $\alpha+ \beta= \alpha\beta=10$, then find a and c ?

54. The sum of zeroes of the polynomial $\sqrt{2}x^2- 17$ are given as :

55. If α, β are zeroes of the polynomial x^2-1, then value of $(\alpha + \beta)$ is : (errors - eraser)

56. The number of polynomials having zeroes -3 and 5 is :
    (a) only one (b) infinite (c) exactly two (d) at most two

57. In a pool at an aquarium, a dolphin jumps out of the water travelling at 20 cm per second. Its height above water level after t seconds is given by $h = 20t-16t^2$. (errors. eraser)
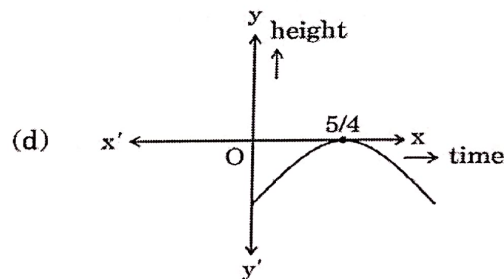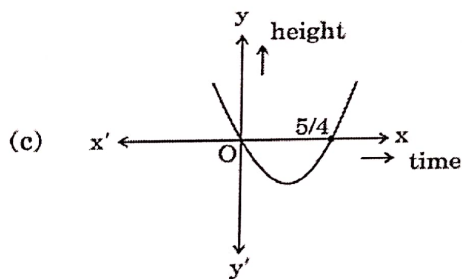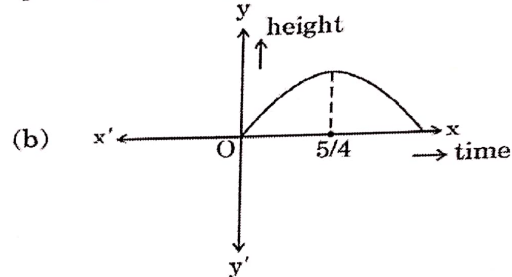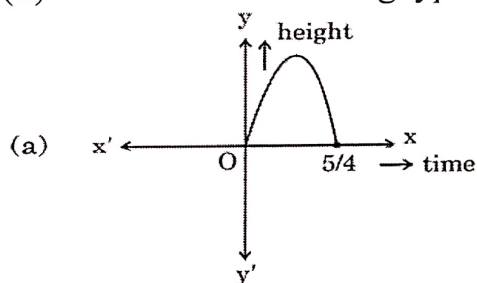
Based on the above, answer the following questions :
(i) Find zeroes of polynomial $p(t) = 20t - 16t^2$ (errors · eraser)
(ii) Which of the following types of graph represents $p(t)$?

(a)

(b)

(c)

(d)

(iii) (a) What would be the value of h at $t = 2/3$? Interpret the result.
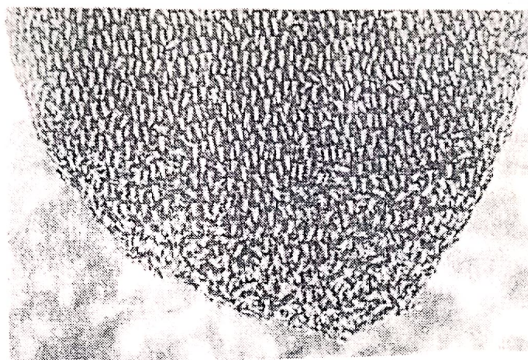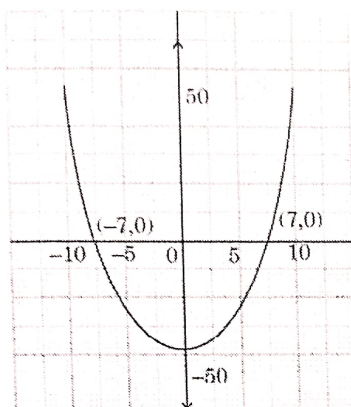OR
(iii) (b) How much distance has the dolphin covered before hitting the water level again ?   (errors · eraser)

58. If the zeroes of the quadratic polynomial $x^2 + (a+1)x + b$ are 2 and -3, then find value of a and b ?

59. While playing in a garden, Samaira saw a honeycomb and asked her mother what is that. Her mother said that it's a honeycomb made by honey bees to store honey. Also, she told her that the shape of the honeycomb formed is a ismathematical structure. The mathematical representation of the honeycomb is shown in the graph.   (errors ~ eraser)
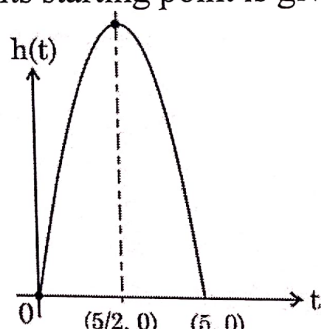
Based on the above information, answer the following questions :

(i) How many zeroes are there for the polynomial represented by the graph given ?

(ii) Write the zeroes of the polynomial. (errors. eraser)

(iii) (a) If the zeroes of a polynomial $x^2 + (a + 1) x + b$ are 2 and -3, then determine the values of a and b.

OR

(iii) (b) If the square of difference of the zeroes of the polynomial $x^2 + px + 45$ is 144, then find the value of p.

60. The graph of a polynomial intersects the y-axis at one point and the x-axis at two points. The number of zeroes of this polynomial are :   (A) 1 (B) 2 (C) 3 (D) 0
(errors. eraser)

61. If a and b are the zeroes of the quadratic polynomial $f(x) = 6x^2 + 11x - 10$, find the value of $(b/a + a/b)$.

62. Find the zeroes of the polynomial $f(t) = t^2 + 4\sqrt{3} t - 15$ and verify the relationship between the zeroes and the coefficients of the polynomial. (errors. eraser)

63. If the sum of the zeroes of the polynomial $p(x)= 2x^2-k\sqrt{2}x+1$ is $\sqrt{2}$, then value of k is :

64. The zeroes of the polynomial $x^2 + px + q$ are twice the zeroes of the polynomial $4x^2-5x-6$. The value of p is :

65. A ball is thrown in the air so that t seconds after it is thrown, Its height h metre above its starting point is given by the polynomial $h = 25t - 5t^2$. (errors. eraser)

Observe the graph of the polynomial and answer the following questions:

(i) Write zeroes of the given polynomial.

(ii) Find the maximum height achieved by ball. (errors. eraser)

(iii) (a) After throwing upward, how much time did the ball take to reach to the height of 30m ?

OR

(iii) (b) Find the two different values of t when the height of the ball was 20m.

66. What should be subtracted from the polynomial $x^2 - 16x + 30$, so that 15 is the zero of the resulting polynomial?

67. What should be added from the polynomial $x^2 - 5x + 4$, so that 3 is the zero of the resulting polynomial?

68. If a polynomial $p(x)$ is given by $p(x) = x^2 - 5x + 6$, then the value of $p(1) + p(4)$ is :

69. A quadratic polynomial, one of whose zeroes is $2 + \sqrt{5}$ and the sum of whose zeroes is 4, is :

   (A) $x^2 + 4x - 1$ (B) $x^2 - 4x - 1$
   (C) $x^2 - 4x + 1$ (D) $x^2 + 4x + 1$

70. If a, b are zeroes of the polynomial $p(x) = 5x^2 - 6x + 1$, then find the value of $a + b + ab$.

71. If a and b are the zeroes of the polynomial $p(x) = kx^2 - 30x + 45k$ and $a + b = ab$, then the value of k is :

72. If a and b are zeroes of the quadratic polynomial $p(x) = x^2 - 5x + 4$, then find the value of $1/b + 1/a - 2ab$.

73. Find a quadratic polynomial whose sum of the zeroes is 8 and difference of the zeroes is 2.

74. If a and b are the zeroes of the polynomial $p(x) = x^2 - (k + 5)x + (5k + 1)$ such that, $(a + b = ab/3)$, then find the value of k.

75. If a, b are the zeroes of the polynomial $3x^2 - 13x - 10$, then find the value of $(3a + 1)(3b + 1)$.