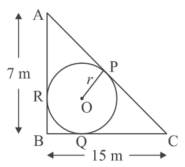
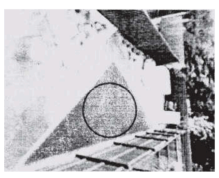
Q1. **Read the case study given below and answer the questions that follow:** **4 Marks**

Aanya and her father go to meet her friend Juhi for a party. When they reached to [uhi's place, Aanya saw the roof of the house, which is triangular in shape. If she imagined the dimensions of the roof as given in the figure, then answer the following questions.

1. What is the height of the triangular roof if the base of the triangle is 10 meters and the height is given as 6 meters?
2. If angle A is 30°, find the length of side AC of the triangle if angle C is 60° and side BC (opposite to angle C) is 10 meters.

Q2. A backyard is in the shape of a triangle ABC with right angle at B. AB = 7m and BC = 15m. A circular pit was dug inside it such that it touches the walls AC, BC and AB at P, Q and R respectively such that AP = x m. **4 Marks**





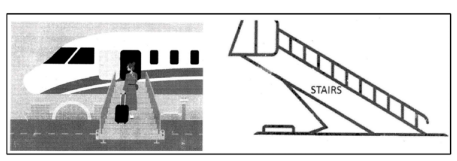
Based on the above information, answer the following questions:

1. Find the length of AR in terms of x.
2. Write the type of quadrilateral BQOR.
3.
1. Find the length PC in terms of x and hence find the value of x.

OR

2. Find x and hence find the radius r of circle.

Q3. **4 Marks**



An aircraft has a door sill at a height of 15 feet above the ground. A stair car is placed at a horizontal distance of 15 feet from the plane.

Based on given information, answer the questions given in part (i) and (ii).

1. Find the angle at which stairs are inclined to reach the door sill 15 feet high above the ground.
2. Find the length of stairs used to reach the door sill.

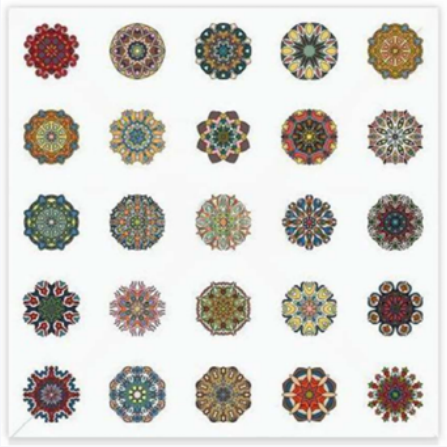
Further, answer any one of the following questions:

3.
1. If the the 20 feet long stairs is inclined at an angle of 60° to reach door sill, then find the height of the door sill above the ground.

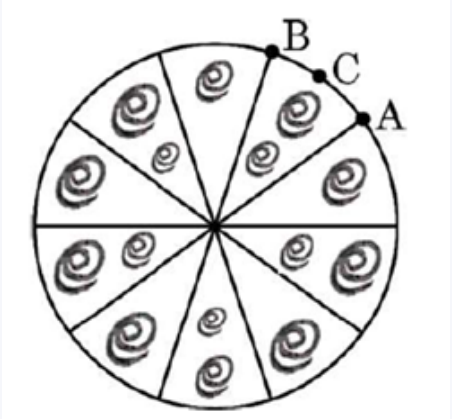
OR

2. What should be the shortest possible length of stairs to reach the of door sill of the plane 20 feet above the ground, if the angle elevation cannot exceed 30° ? Also, find the horizontal distance of base of stair car from the planE.

Q4. A brooch is a decorative piece often worn on clothing like jackets, blouses or dresses to add elegance. Made from precious metals and decorated with gemstones, brooches come in many shapes and designs. **4 Marks**



One such brooch is made with silver wire in the form of a circle with diameter 35mm. The wire is also used in making 5 diameters which divide the circle into 10 equal sectors as shown in the figure.



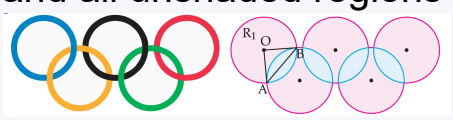
Based on the above given information, answer the following questions:

1. Find the central angle of each sector.
2. Find the length of the arc ACB.
3.
1. Find the area of each sector of the brooch.

OR

2. Find the total length of the silver wire used.

Q5. The all Olympic symbol comprising five interlocking rings represents the union of the five continents of the world and the meeting of athletes from over the world at the Olympic games. In order to spread awareness about Olympic games, students of Class-X took part in various activities organised by the school. One such group of students made 5 circular rings in the school lawn with the help of ropes. Each circular ring required 44 m of rope. Also, in the shaded regions as shown in the figure, students made rangoli showcasing various sports and games. It is given that AOAB is an equilateral triangle and all unshaded regions are congruent. **4 Marks**



Based on above information, answer the following questions:

1. Find the radius of each circular ring.
2. What is the measure of $\angle AOB$
3. (a) Find the area of shaded region R_1

OR

3. (b) Find the length of rope around the unshaded regions.

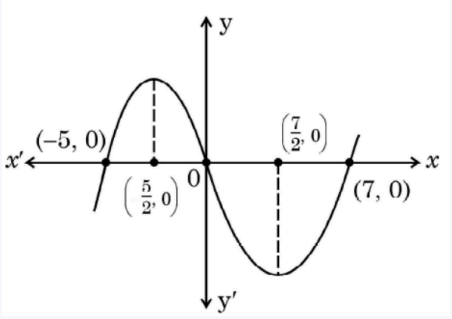
Q6. If $\triangle ABC \sim \triangle DEF$ such that AB = 1.2cm and DE = 1.4cm, the ratio of the areas of $\triangle ABC$ and $\triangle DEF$ is: **1 Mark**

A 49 : 36 **B** 6 : 7 **C** 7 : 6 **D** 36 : 49

Q7. If the coordinates of one end of a diameter of a circle are (2, 3) and the coordinates of its centre are (–2, 5), then the coordinates of the other end of the diameter are: **1 Mark**

A (-6, 7) **B** (6, -7) **C** (6, 7) **D** (-6, -7)

Q8. The graph of y = p(x) is given in the adjoining figure. Zeroes of the polynomial p(x) are: **1 Mark**



A $-5, 7$ **B** $\frac{-5}{2}, \frac{-7}{2}$

C $-5, 0, 7$ **D** $-5, \frac{-5}{2}, \frac{-7}{2}, 7$

Q9. The quadratic equation $x^2 - 4x + k = 0$ has distinct real roots if: **1 Mark**

A k = 4 **B** k > 4 **C** k = 16 **D** k < 4

Q10. The angle of depression of a car, standing on the ground, from the top of a 75 m high tower, is 30°. The distance of the car from the base of the tower (in m.) is: **1 Mark**

A $25\sqrt{3}$ **B** $50\sqrt{3}$ **C** $75\sqrt{3}$ **D** 150

Q11. If the difference between the circumference and the radius of a circle is 37 cm, then using $\pi = \frac{22}{7}$, the circumference (in cm) of the circle is: **1 Mark**

A 154 **B** 14 **C** 44 **D** 7

Q12. A sphere of diameter 18 cm is dropped into a cylindrical vessel of diameter 36 cm, partly filled with water. If the sphere is completely submerged, then the water level rises (in cm) by **1 Mark**

A 3 **B** 4 **C** 5 **D** 6

Q13. In Figure 1, O is the centre of a circle, PQ is a chord and PT is the tangent at P. If $\angle POQ = 70^\circ$, then $\angle TPQ$ is equal to: **1 Mark**

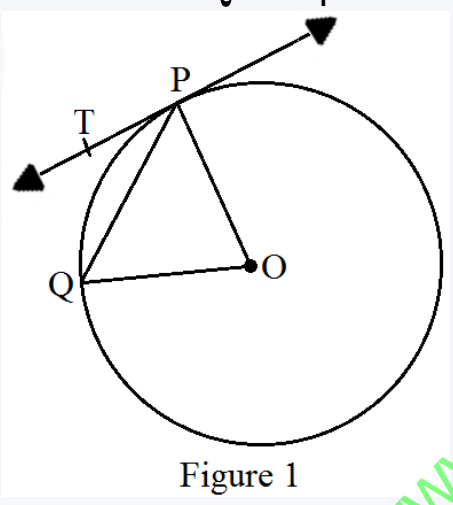
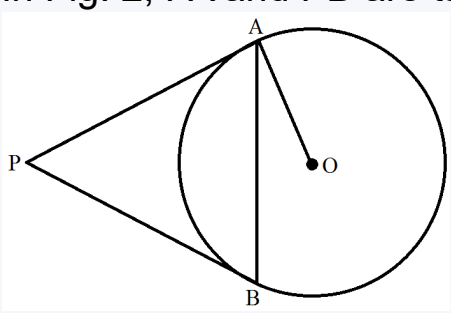


Figure 1

A 55° **B** 70° **C** 45° **D** 35°

Q14. In Fig. 2, PA and PB are tangents to the circle with centre O. If $\angle APB = 60^\circ$ then $\angle OAB$ is: **1 Mark**



A 30° **B** 60° **C** 90° **D** 15°

Q15. The point P which divides the line segment joining the points A(2,- 5) and B(5, 2) in the ratio 2 : 3 lies in the quadrant: **1 Mark**

A I **B** II **C** III **D** IV

Q16. The value of x for which 2x, (x + 10) and (3x + 2) are the three consecutive terms of an AP, is: **1 Mark**

A 6 **B** -6 **C** 18 **D** -18

Q17. A card is drawn from a well-shuffled deck of 52 playing cards. The probability that the card will not be an ace is: **1 Mark**

A $\frac{1}{13}$ **B** $\frac{1}{4}$ **C** $\frac{12}{13}$ **D** $\frac{3}{4}$

Q18. The degree of polynomial having zeroes -3 and 4 only is: **1 Mark**

A 2 **B** 1 **C** More than 3 **D** 3

Q19. If p - 1, p + 1 and 2p + 3 are in A.P., then the value of p is: **1 Mark**

A -2 **B** 4 **C** 0 **D** 2

Q20. n^{th} term of an A.P. is 7n + 4. The common difference is: **1 Mark**

A 7n **B** 4 **C** 7 **D** 1

Q21. If the radius of the base of a right circular cylinder is halved, keeping the height the same, then the ratio of the volume of the cylinder thus obtained to the volume of original cylinder is: **1 Mark**

A 1 : 2 **B** 2 : 1 **C** 1 : 4 **D** 4 : 1

Q22. In what ratio, does x-axis divide the line segment joining the points A(3, 6) and B(-12, -3)? **1 Mark**

A 1 : 2 **B** 1 : 4 **C** 4 : 1 **D** 2 : 1

Q23. In Figure, from an external point P, two tangents PQ and PR are drawn to a circle of radius 4cm with centre O. If $\angle \mathrm{QPR} = 90^{\circ}$, then length of PQ is: **1 Mark**

A $3\mathrm{cm}$ **B** $4\mathrm{cm}$ **C** $2\mathrm{cm}$ **D** $2\sqrt{2}\mathrm{cm}$

Q24. If the point P(k, 0) divides the line segment joining the points A(2, -2) and B(-7, 4) in the ratio 1 : 2, then the value of k is: **1 Mark**

A 1 **B** 2 **C** -2 **D** -1

Q25. If the roots of equation $\mathrm{ax}^2 + \mathrm{bx} + \mathrm{c} = 0, \mathrm{a} \neq 0$ are real and equal, then are real and equal, then which of the following relation is true? **1 Mark**

A $a = \frac{b^2}{c}$ **B** $\mathrm{b}^2 = \mathrm{ac}$

C $\mathrm{ac} = \frac{b^2}{4}$ **D** $\mathrm{c} = \frac{b^2}{a}$

Q26. The distance between the points (m, - n) and (-m, n) is: **1 Mark**

A $\sqrt{\mathrm{m}^2 + \mathrm{n}^2}$ **B** $\mathrm{m} + \mathrm{n}$

C $2\sqrt{\mathrm{m}^2 + \mathrm{n}^2}$ **D** $\sqrt{2\mathrm{m}^2 + \mathrm{n}^2}$

Q27. The angle of depression of a car parked on the road from the top of a 150m high tower is 30°. The distance of the car from the tower (in metres) is: **1 Mark**

A $50\sqrt{3}$ **B** $150\sqrt{3}$ **C** $150\sqrt{2}$ **D** 75

Q28. If $\sin\mathrm{A} = \frac{2}{3}$, then value of cotA is: **1 Mark**

A $\frac{\sqrt{5}}{2}$ **B** $\frac{3}{2}$ **C** $\frac{5}{4}$ **D** $\frac{2}{3}$

Q29. If the sum of zeroes of the polynomial $\mathrm{p(x)} = 2\mathrm{x}^2 - \mathrm{k}\sqrt{2}\mathrm{x} + 1$ is $\sqrt{2}$, then value of & is: **1 Mark**

A $\sqrt{2}$ **B** 2 **C** $2\sqrt{2}$ **D** $\frac{1}{2}$

Q30. In a right triangle ABC, right-angled at B, BC = 12cm and AB = 5 cm. The radius of the circle inscribed in the triangle (in cm) is: **1 Mark**

A 4 **B** 3 **C** 2 **D** 1

Q31. If the points A(x, 2), B(-3, -4) and C(7, -5) are collinear, then the value of x is: **1 Mark**

A -63 **B** 63 **C** 60 **D** -60

Q32. The pair of linear equations. **1 Mark**

$\frac{3\mathrm{x}}{2} + \frac{5\mathrm{y}}{3} = 7$ and $9\mathrm{x} + 10\mathrm{y} = 14$ is:

A Consistent. **B** Inconsistent.

C Consistent with one solution. **D** Consistent with many solutions.

Q33. If α, β are the zerose of a polynomial p(x) = x^2 + x - 1, then, $\frac{1}{\alpha} + \frac{1}{\beta}$ equals to: **1 Mark**

A 1 **B** 2 **C** -1 **D** $\frac{-1}{2}$

Q34. **1 Mark**

In an A.P., if the first term a = 7, nth term a_n = 84 and the sum of first n terms $s_n = \frac{2093}{2}$, then n is equal to:

A 22 **B** 24 **C** 23 **D** 26

Q35. In a survey, it is found that every fifth person has a vehicle. The probability of a person NOT having a vehicle, is: **1 Mark**

A $\frac{1}{5}$ **B** 5% **C** $\frac{4}{5}$ **D** 95%

Q36. The value(s) of k for which the quadratic equation $2x^2 + kx + 2 = 0$ has equal roots, is: **1 Mark**

A 4 **B** ± 4 **C** -4 **D** 0

Q37. The length of shadow of a tower on the plane ground is $\sqrt{3}$ times the height of the tower.The angle of elevation of sun is: **1 Mark**

A 45° **B** 30° **C** 60° **D** 90°

Q38. Which of the following can not be the probability an event? **1 Mark**

A 1.5 **B** $\frac{3}{5}$ **C** 25% **D** 0.3

Q39. The co-ordinates of the point which is reflection of point (–3, 5) in x-axis are. **1 Mark**

A (3, 5) **B** (3, –5) **C** (–3, –5) **D** (–3, 5)

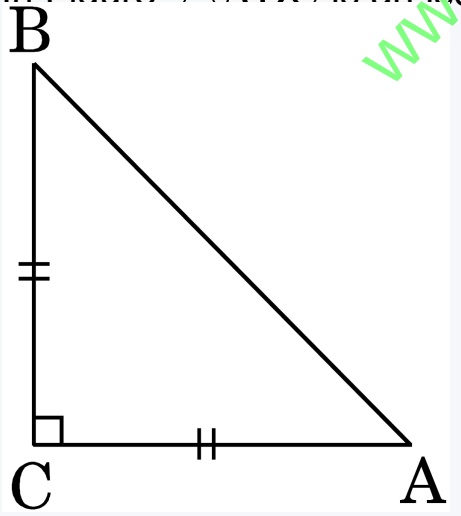
Q40. A solid right circular cone is cut into two parts at the middle of its height by a plane parallel to its base. The ratio of the volume of the smaller cone to the whole cone is: **1 Mark**

A 1 : 2 **B** 1 : 4 **C** 1 : 6 **D** 1 : 8

Q41. Two dice are rolled together. The probability of getting sum of numbers on the two dice as 2, 3 or 5, is: **1 Mark**

A $\frac{7}{36}$ **B** $\frac{11}{36}$ **C** $\frac{5}{36}$ **D** $\frac{4}{9}$

Q42. In Figure $\triangle ABC$ is an isosceles triangle, right-angled at C. Therefore. **1 Mark**



A $AB^2 = 2AC^2$ **B** $BC^2 = 2AB^2$ **C** $AC^2 = 2AB^2$ **D** $AB^2 = 4AC^2$

Q43. In Figure 2, AB and AC are tangents to the circle with centre O such that $\angle BAC = 40^\circ$. Then $\angle BOC$ is equal to: **1 Mark**

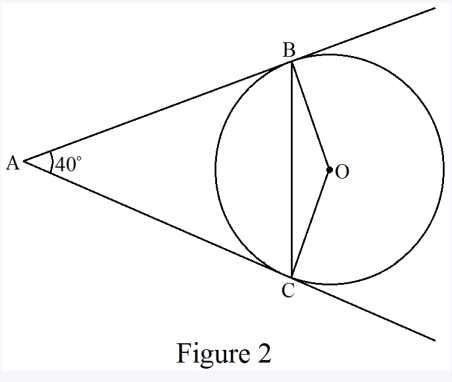


Figure 2

A 40º **B** 50º **C** 140º **D** 150º

Q44. Two circles touch each other externally at P. AB is a common tangent to the circles touching them at A and B. The value of $\angle APB$ is: **1 Mark**

A 30° **B** 45° **C** 60° **D** 90°

Q45. If α, β are the zeroes of the polynomial $6x^2 - 5x - 4$, then $\frac{1}{\alpha} + \frac{1}{\beta}$ is equal to: **1 Mark**

A $\frac{5}{4}$ **B** $-\frac{5}{4}$ **C** $\frac{4}{5}$ **D** $\frac{5}{24}$

Q46. If $\cos(\alpha + \beta) = 0$, then value of $\cos\left(\frac{\alpha+\beta}{2}\right)$ is equal to: **1 Mark**

A $\frac{1}{\sqrt{2}}$ **B** $\frac{1}{2}$ **C** 0 **D** $\sqrt{2}$

Q47. The roots of the equation $x^2 + x - p(p + 1) = 0$, where p is a constant, are: **1 Mark**

A p, p + 1 **B** -p, p + 1 **C** p, - (p + 1) **D** −p, - (p + 1)

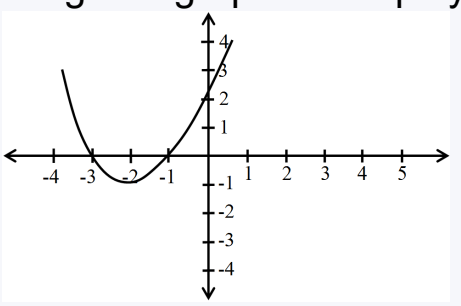
Q48. Which of the following is a quadratic polynomial with zeroes $\frac{5}{3}$ and 0? **1 Mark**

A $3x(3x - 5)$ **B** $3x(x - 5)$
C $x^2 - \frac{5}{3}$ **D** $\frac{5}{3}x^2$

Q49. If $2\tan A = 3$, then the value of $\frac{4\sin A + 3\cos A}{4\sin A - 3\cos A}$ is: **1 Mark**

A $\frac{7}{\sqrt{13}}$ **B** $\frac{1}{\sqrt{13}}$ **C** 3 **D** Does not exist

Q50. In fig. the graph of the polynomial p(x) is given. The number of zeroes of the polynomial is: **1 Mark**



A 1 **B** 2 **C** 3 **D** 0

Q51. In Fig.2, a circle with centre O is inscribed in a quadrilateral ABCD such that, it touches the sides BC, AB, AD and CD at points P, Q, R and S respectively, If AB = 29cm, AD = 23cm, $\angle B = 90^\circ$ and DS = 5cm, then the radius of the circle (in cm.) is: **1 Mark**

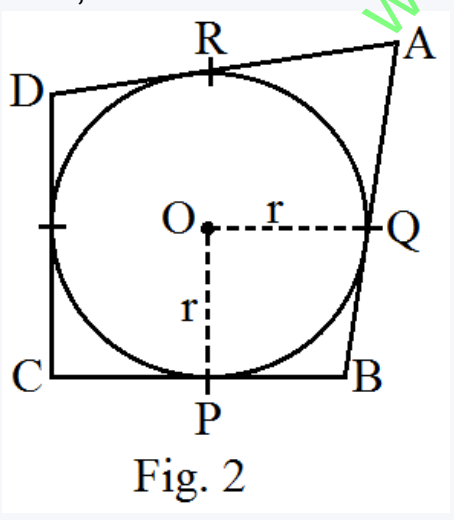


Fig. 2

A 11 **B** 18 **C** 6 **D** 15

Q52. The area of metal sheet required to make a closed hollow cylinder of height 2.4m and base radius 0.7m, is. **1 Mark**

A 10.56m^2 **B** 13.52m^2 **C** 13.64m^2 **D** 14.08m^2

Q53. A chord of a circle of radius 10cm subtends a right angle at its centre. The length of the chord (in cm) is: **1 Mark**

A $5\sqrt{2}$ **B** $10\sqrt{2}$ **C** $\frac{5}{\sqrt{2}}$ **D** $10\sqrt{3}$

Q54. In Figure, PQ is tangent to the circle with centre at O, at the point B. If $\angle AOB = 100^\circ$, then $\angle ABP$ is equal to: **1 Mark**

A 50° **B** 40° **C** 60° **D** 80°

Q55. The radius (in cm) of the largest right circular cone that can be cut out from a cube Of edge 4.2 cm is **1 Mark**

A 4.2 **B** 2.1 **C** 8.4 **D** 1.05

Q56. From a point Q, 13cm away from the centre of a circle, the length of tangent PQ to the circle is 12cm. The radius of the circle (in cm) is: **1 Mark**

A 25 **B** $\sqrt{313}$ **C** 5 **D** 1

Q57. The angle of elevation of the top of a tower from a point on the ground. which is 30m away from the foot of the tower is 45°. The height of the tower (in metres) is: **1 Mark**

A 15 **B** 30 **C** $30\sqrt{3}$ **D** $10\sqrt{3}$

Q58. Which of the following is not probability of an event? **1 Mark**

A 0.89 **B** 52% **C** $\frac{1}{13}\%$ **D** $\frac{1}{0.89}$

Q59. In a group of 20 people, 5 can't swim. If one person is selected at random, then the probability that he/she can swim, is: **1 Mark**

A $\frac{3}{4}$ **B** $\frac{1}{3}$ **C** 1 **D** $\frac{1}{4}$

Q60. The distance between the points $(0, 2\sqrt{5})$ and $(-2\sqrt{5}, 0)$ is: **1 Mark**

A $2\sqrt{10}$ units **B** $4\sqrt{10}$ units
C $2\sqrt{20}$ units **D** 0

Q61. The first three terms of an AP respectively are 3y - 1, 3y + 5 and 5y + 1. Then y equals: **1 Mark**

A -3 **B** 4 **C** 5 **D** 2

Q62. ABCD is a rectangle whose three vertices are B(4, 0), C(4, 3) and D(0, 3). The length of one of its diagonals is: **1 Mark**

A 5 **B** 4 **C** 3 **D** 25

Q63. IIn an A.P., if the first term (a) = — 16 and the common difference (d) =- 2, then the sum of first 10 terms is: **1 Mark**

A - 200 **B** - 70 **C** - 250 **D** 250

Q64. The sum of exponents of prime factors in the prime-factorisation of 196 is: **1 Mark**

A 3 **B** 4 **C** 5 **D** 2

Q65. If (a, b) is the mid-point of the line segment joining the points A(10, –6) and B(k, 4) and a – 2b = 18, the value of k is: **1 Mark**

A 30 **B** 22 **C** 4 **D** 40

Q66. In Question an Assertion (A) statement is followed by a statement of Reason (R). Select the correct option out of the following: **1 Mark**
Assertion (A): Point P(0, 2) is the point of intersection of y-axis with the line 3x + 2y = 4.
Reason (R): The distance of point P(0, 2) from x-axis is 2 units.

A Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
B Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).
C Assertion (A) is true but Reason (R) is false.
D Assertion (A) is false but Reason (R) is true.

Q67. **Directions:** In a statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct option. **1 Mark**
Assertion (A): The tangents drawn at the end points of a diameter of a circle, are parallel.
Reason (R): Diameter of a circle is the longest chord.

A Both, Assertion (A) and Reason (R) are true and Reason (R) is correct explanation of Assertion (A).
B Both, Assertion (A) and Reason (R) are true but Reason (R) is not correct explanation for Assertion (A).
C Assertion (A) is true but Reason (R) is false.
D Assertion (A) is false but Reason (R) is true.

Q68. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Mark**

Assertion: The graph of quadratic polynomial P(x) intersect x - axis at two point.

Reason: Degree of quadratic polynomial is 2.

A Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

B Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

C Assertion (A) is true but reason (R) is false.

D Assertion (A) is false but reason (R) is true.

Q69. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Mark**

Assertion: The graph y = f(x) is shown in figure, for the polynomial f(x). The number of zero of f(x) is 4.

Reason: The number of zero of the polynomial f(x) - is the number of point of which f(x) cuts of touches the axes.

A Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

B Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

C Assertion (A) is true but reason (R) is false.

D Assertion (A) is false but reason (R) is true.

Q70. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Mark**

Assertion: The sum of the series with the nth term. t_n = (9 - 5n) is (465), when no. of terms n = 15.

Reason: Given series is in A.P. and sum of n terms of an A.P. is $s_n = \frac{n}{2}[2a + (n-1)d]$

A Both assertion (A) and reason (R) are true and reason (R) isthe correct explanation of assertion (A).

B Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

C Assertion (A) is true but reason (R) is false.

D Assertion (A) is false but reason (R) is true

Q71. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Mark**

Assertion (A): The values of x are $-\frac{a}{2}, a$ for a quadratic equation $2x^2 + ax - a^2 = 0$

Reason (R): For quadratic equation $ax^2 + bx + c = 0$, $x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$

A Both assertion (A) and reason (R) are true and reason (R) isthe correct explanation of assertion (A).

B Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

C Assertion (A) is true but reason (R) is false.

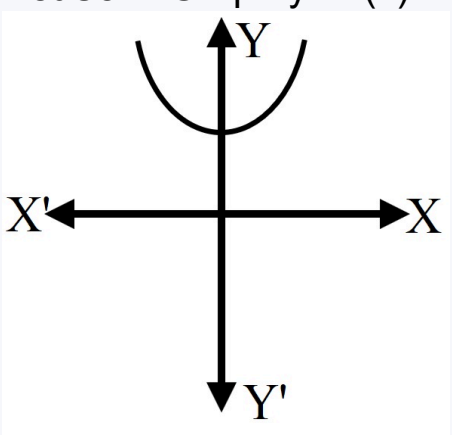
D Assertion (A) is false but reason (R) is true

Q72. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. **1 Mark**

Read both the statements carefully and choose the correct alternative from the following:

Assertion: The graph of y = f(x) is given, number of zeroes of f(x) = 0.

Reason: Graph y = f(x) does not intersect x - axis.



1. Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
2. Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
3. Assertion (A) is true but reason (R) is false.
4. Assertion (A) is false but reason (R) is true.

A Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
B Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
C Assertion (A) is true but reason (R) is false.
D Assertion (A) is false but reason (R) is true.

Q73. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Mark**
Assertion: $P(x) = 14x^3 - 2x^2 + 8x^4 + 7x - 8$ is a polynomial of degree 3.
Reason: The highest power of x in the polynomial p(x) is the degree of the polynomial.

A Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
B Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
C Assertion (A) is true but reason (R) is false.
D Assertion (A) is false but reason (R) is true.

Q74. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Mark**
Assertion: A pair of linear equations has no solution (s) if it is represented by intersecting lines graphically.
Reason: If the pair of lines are intersecting, then the pair has unique solution and is called consistent pair of equations.
(a)Both assertion (A) and reason (R) are true and reason (R) isthe correct explanation of assertion (A).
(b)Both assertion (A) and reason (R) are true but reason (R) isnot the correct explanation of assertion (A).
(c) Assertion (A) is true but reason (R) is false.
(d)Assertion (A) is false but reason (R) is true.

A Both assertion (A) and reason (R) are true and reason (R) isthe correct explanation of assertion (A).
B Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
C Assertion (A) is true but reason (R) is false.
D Assertion (A) is false but reason (R) is true

Q75. **Directions:** In the following questions, a statement of assertion (A) is followed by a statement of reason (R).Mark the correct choice as: **1 Mark**
Assertion: Total surface area of the cylinder having radius of the base 14cm and height 30cm is $3872cm^2$
Reason: If r be the radius and h be the height of the cylinder, then total surface area $(2\pi rh + 2\pi r^2)$

A Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
B Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
C Assertion (A) is true but reason (R) is false.
D Assertion (A) is false but reason (R) is true.

Q76. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Mark**
Assertion: If P and q are integers and is represented in the form of $\frac{p}{q}$ then it is a ratio nal number.
Reason: $\frac{17}{3}$ is a rational number.

A Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
B Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
C Assertion (A) is true but reason (R) is false.
D Assertion (A) is false but reason (R) is true.

Q77. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Mark**
Assertion: If the product of the zeroes of the quadratic polynomial $x^2 + 3x + 5k$ is -10 then value of kis -2.
Reason: Sum of zeroes of a quadratic polynomial ax2 + bx +c is $\frac{-b}{a}$.

A Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
B Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

C Assertion (A) is true but reason (R) is false.

D Assertion (A) is false but reason (R) is true.

Q78. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Mark**

Assertion: $3y^2 + 17y - 30 = 0$ have distinct roots.

Reason: The quadratic equation ax2 + bx + c = 0 have distinct roots (real roots) if D > 0.

A Assertion and Reason both are correct statements and Reason is the correct explanation of Assertion.

B Assertion and Reason both are correct statements but Reason is not the correct explanation of Assertion.

C Assertion is correct statement but Reason is wrong statement.

D Assertion is wrong statement but Reason is correct statement.

Q79. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Mark**

Assertion: Sum of first hundred even natural numbers divisible by 5 is 500.

Reason: Sum of first n-terms of an A.P. is given by $\mathrm{s_n} = \frac{\mathrm{n}}{2}[\mathrm{a}+\ell]$ where ℓ = last term.

A Both assertion (A) and reason (R) are true and reason (R) isthe correct explanation of assertion (A).

B Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

C Assertion (A) is true but reason (R) is false.

D Assertion (A) is false but reason (R) is true

Q80. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Mark**

Assertion: If we add zero to no. or multiply by 1 the no. will remain unchanged is known as identity property.

Reason: 5 + 0 = 5 is a identity property.

A Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

B Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

C Assertion (A) is true but reason (R) is false.

D Assertion (A) is false but reason (R) is true.

Q81. **DIRECTION:** In the following questions, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as: **1 Mark**

Assertion: If a line intersects sides AB and AC of a $\triangle$ ABC at D and E respectively and is parallel to BC, then $\frac{\mathrm{AD}}{\mathrm{AB}} = \frac{\mathrm{AE}}{\mathrm{AC}}$

Reason: If a line is parallel to one side of a triangle then it divides the other two sides in the same ratio.

A Both assertion (A) and reason (R) are true and reason (R) isthe correct explanation of assertion (A).

B Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

C Assertion (A) is true but reason (R) is false.

D Assertion (A) is false but reason (R) is true

Q82. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Mark**

Assertion: The angles of cyclic quadrilaterals ABCD are: A = (6x + 10), B = (5x)°, C = (x + y)° and D = (3y - 10)°. The value of x and y is 20° and 30°

Reason: in cyclic quadrilaterals, the sum of the opposite angles are 180°.

A both assertion and reason are correct and reason is correct explanation for assertion

B both assertion and reason are correct but reason is correct explanation for assertion

C assertion is correct but reason is false

D both assertion and reason are false

Q83. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Mark**

Assertion: $3 + 2\sqrt{7}$ is an irrational no.

Reason: In $\frac{\mathrm{p}}{\mathrm{q}}$ form $3 + 2\sqrt{7}$ can not be written.

A Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

B Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

C Assertion (A) is true but reason (R) is false.

D Assertion (A) is false but reason (R) is true.

Q84. **Directions:** In the following questions, a statement of assertion (A) is followed by a statement of reason (R).Mark the correct choice as: **1 Mark**

Assertion: If a box contains 5 white, 2 red and 4 black marbles, then the probability of not drawing a white marble from the box is a $\frac{5}{11}$

Reason: $\mathrm{P}(\mathrm{E}) = 1 - \mathrm{P}(\mathrm{E})$, where E is any evnet.

A Both Assertion and Reason are true and Reason is the correct explanation of Assertion.

B Both Assertion and Reason are true and Reason is not the correct explanation of Assertion.

C Assertion is true but Reason is false.

D Assertion is false but Reason is true.

Q85. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Mark**

Assertion: -1 is not multiplicative identity.

Reason: If we mutiply -1 to any real no. sign of that no. gets changed.

A Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

B Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

C Assertion (A) is true but reason (R) is false.

D Assertion (A) is false but reason (R) is true.