CBSE Class 10 Maths Answer Key 2025

Set-1 Answer Key (Maths- STANDARD)

1. $\sqrt{0.4}$ is a/an
(A) natural number
(B) integer
(C) rational number
(D) irrational number
Answer: (D) irrational number

2. Which of the following cannot be the unit digit of 8^n, where n is a natural number?
(A) 4
(B) 2
(C) 0
(D) 6
Answer: (C) 0

3. Which of the following quadratic equations has real and equal roots?

(A) $(x+1)^2=2x+1$
(B) $x^2+x=0$
(C) $x^2-4=0$
(D) $x^2+x+1=0$
Answer: (B) $x^2+x=0$

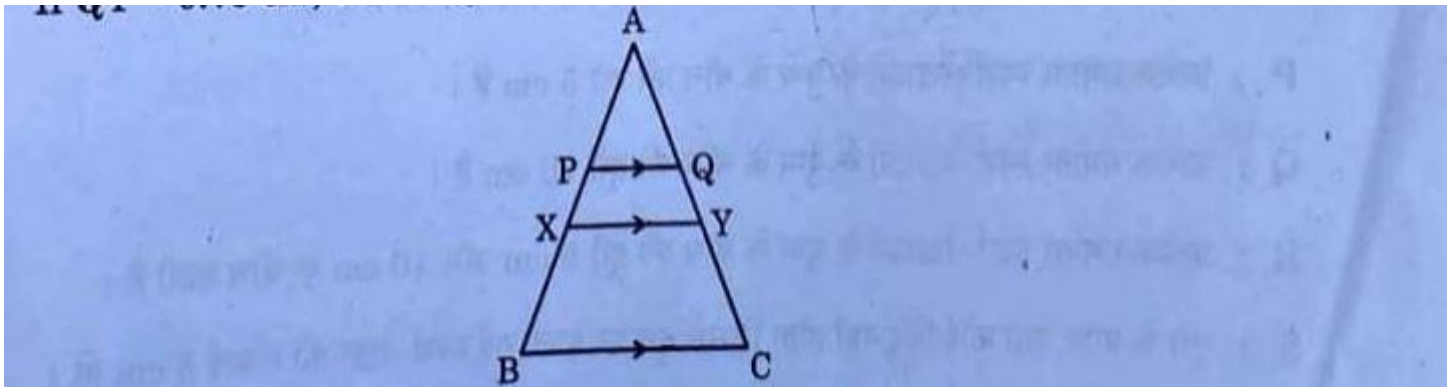
4. If the zeroes of the polynomial $ax^2+bx+2a/b$ are reciprocal of each other, then the value of b is

(A) 2
(B) 1/2
(C) -2
(D) −1/2

Answer: (A) 2

5. The distance of the point A(-3, -4) from the x-axis is
(A) 3
(B) 4
(C) 5
(D) 7
Answer: (B) 4

6. In the adjoining figure, PQ || XY || BC, AP = 2 cm, PX = 1.5 cm, and BX = 4 cm. If QY = 0.75 cm, then AQ + CY =



(A) 6 cm
(B) 4.5 cm
(C) 3 cm
(D) 5.25 cm
Answer: (B) 4.5 cm

7.Given **△ABC ~ △PQR**, **∠A = 30°** and **∠Q = 90°**. The value of **(∠R + ∠B)** is:
(A) 90°
(B) 120°
(C) 150°
(D) 180°

Answer: (C) 150°

8. Two coins are tossed simultaneously. The probability of getting at least one head is:

(A) 1/4

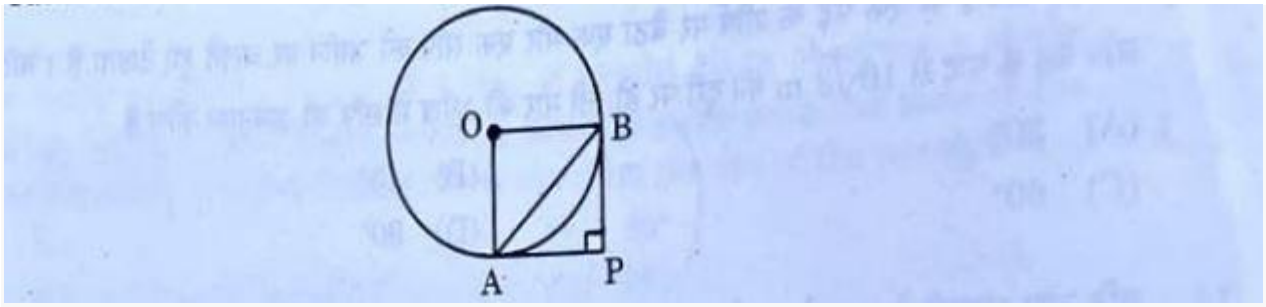
(B) 1/2

(C) 3/4

(D) 1

Answer: (C) **3/4**

9. In the adjoining figure, PA and PB are tangents to a circle with center O such that ∠P = 90°. If AB = 3√2 cm, then the diameter of the circle is:



(A) 3√2 cm

(B) 6√2 cm

(C) 3 cm

(D) 6 cm

Answer: (D) **6 cm**

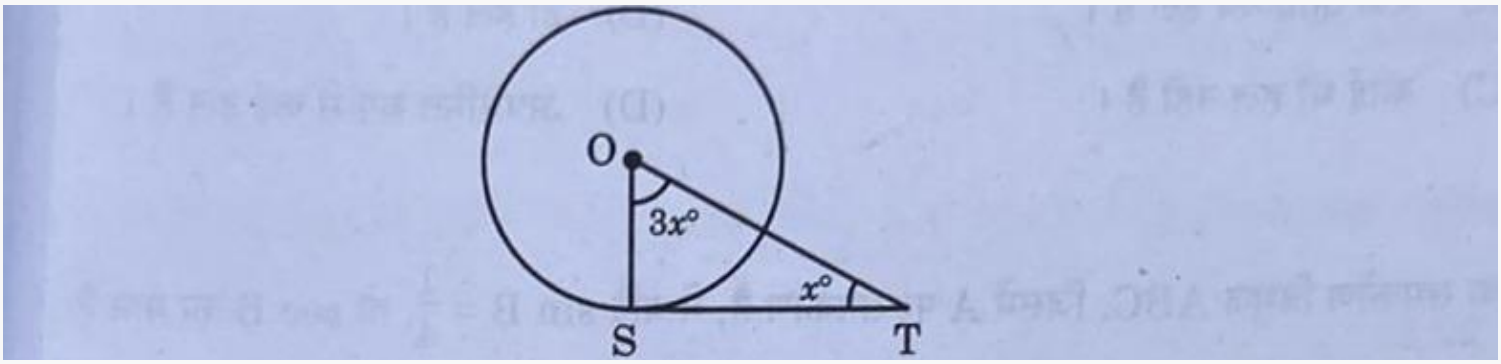
10. For a circle with center O and radius 5 cm, which of the following statements is true?

P: Distance between every pair of parallel tangents is **5 cm**.
Q: Distance between every pair of parallel tangents is **10 cm**.
R: Distance between every pair of parallel tangents must be between **5 cm and 10 cm**.
S: There does not exist a point outside the circle from where the length of the tangent is **5 cm**.

(A) **P**
(B) **Q**
(C) **R**
(D) **S**

Answer: (B) **Q**

11. In the adjoining figure, TS is a tangent to a circle with center O. The value of 2x° is:



(A) 22.5
(B) 45
(C) 67.5
(D) 90

Answer: (B) 45°

12.If $y= (2 \tan 30° / 1- \tan^2 30°)$ then x : y = ?

Options:
(A) 1: 1
(B) 1: 2
(C) 2: 1
(D) 4: 1

Answer: (C) 2: 1

13. A peacock sitting on the top of a tree of height 10 m observes a snake moving on the ground. If the snake is $10\sqrt{3}$ m away from the base of the tree, then the angle of depression of the snake from the eye of the peacock is:

(A) 30°
(B) 45°
(C) 60°
(D) 90°

Answer: (C) 30°

14. If a cone of greatest possible volume is hollowed out from a solid wooden cylinder, then the ratio of the volume of remaining wood to the volume of the cone hollowed out is:

(A) 1: 1
(B) 1 : 3
(C) 2: 1
(D) 3: 1

Answer: (D) 2: 1

15.If the mode of some observations is 10 and the sum of mean and median is 25, then the mean and median respectively are:

(A) 12 and 13
(B) 13 and 12
(C) 10 and 15
(D) 15 and 10

Answer: (B) 13 and 12

16. If the maximum number of students has obtained 52 marks out of 80, then:

(A) 52 is the mean of the data.
(B) 52 is the median of the data.
(C) 52 is the mode of the data.
(D) 52 is the range of the data.

Answer: (C) 52 is the mode of the data.

17. The system of equations $2x+1=0$ and $3y-5=0$ has:

(A) Unique solution
(B) Two solutions
(C) No solution
(D) Infinite number of solutions

Answer: (A) Unique solution

18. In a right triangle ABC, right-angled at A, if $\sin B=1/4$, then the value of sec B is:

(A) 4
(B) $\sqrt{15}/4$
(C) $\sqrt{15}$
(D) $4/\sqrt{15}$

Answer: (D) $4/\sqrt{15}$

(Assertion-Reason Type)

19. Assertion (A): For any two prime numbers **p** and **q**, their **HCF is 1** and **LCM is** p+qp + qp+q.

Reason (R): For any two natural numbers, **HCF × LCM = product of numbers**.

Answer: (D) A is false, but R is true.

20. In an experiment of throwing a die,

Assertion (A): Event $\mathbf{E_1}$ (getting a number less than 3) and Event $\mathbf{E_2}$ (getting a number greater than 3) are complementary events.

Reason (R): If two events **E** and **F** are complementary, then:

P(E)+P(F)=1

Answer: (D) A is false, but R is true.

Set-2 Answer Key (Maths- STANDARD)

1. The system of equations x+5=0 and 2x−1=0 has
(A) No solution
(B) Unique solution
(C) Two solutions
(D) Infinite solutions
Answer: (B) Unique solution

2. In a right triangle ABC, right-angled at A, if sin⁡B=1/4, then the value of sec⁡B is
(A) 4
(B) √15/4
(C) √15
(D) 4/√15

Answer: (D) $4/\sqrt{15}$

3. √0.4 is a/an
(A) natural number
(B) integer
(C) rational number
(D) irrational number
Answer: (D) irrational number

4. Which of the following cannot be the unit digit of 8^n, where n is a natural number?
(A) 4
(B) 2
(C) 0
(D) 6
Answer: (C) 0

5. Which of the following quadratic equations has real and distinct roots?
(A) $x^2+2x=0$
(B) $x^2+x+1=0$

(C) $(x-1)^2=1-2x$
(D) $2x^2+x+1=0$
Answer: (A) $x^2+2x=0$

6. If the zeroes of the polynomial $ax^2+bx+2a/b$ are reciprocal of each other, then the value of b is

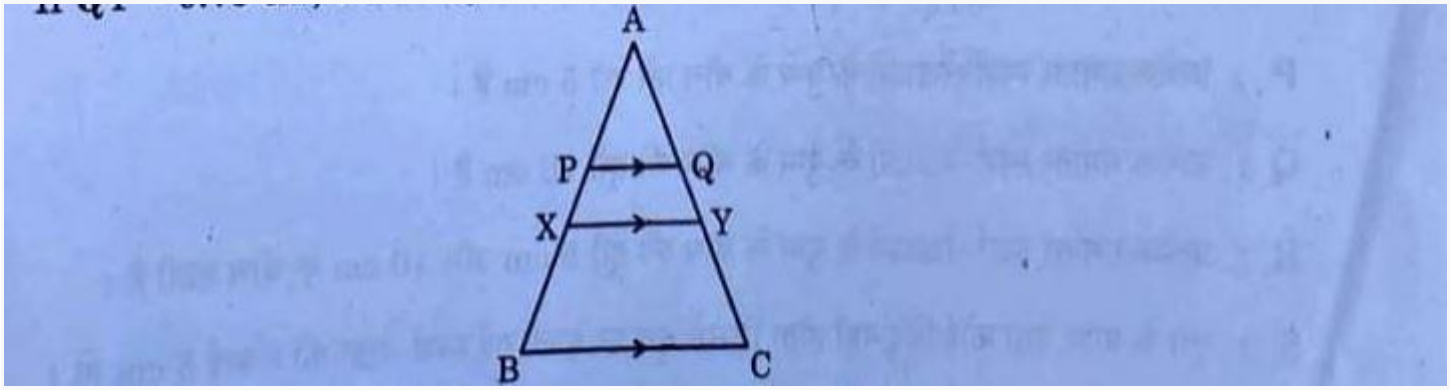
(A) 2
(B) 1/2
(C) -2
(D) −1/2

Answer: (A) 2

7. The distance of point (a, -b) from the x-axis is
(A) a
(B) -a
(C) b
(D) -b

Answer: (C) b

8. In the adjoining figure, PQ || XY || BC, AP = 2 cm, PX = 1.5 cm, and BX = 4 cm. If QY = 0.75 cm, then AQ + CY =



(A) 6 cm
(B) 4.5 cm
(C) 3 cm
(D) 5.25 cm
Answer: (B) 4.5 cm

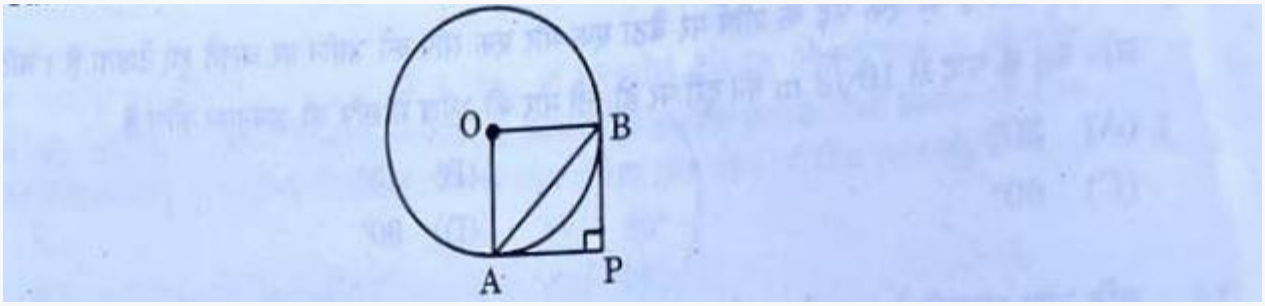
9. Given $\Delta ABC \sim \Delta PQR$, $\angle A = 30°$ and $\angle Q = 90°$. The value of $(\angle R + \angle B)$ is
(A) 90°
(B) 120°
(C) 150°
(D) 180°

Answer: (C) 150°

10. Two coins are tossed simultaneously. The probability of getting at least one head is
(A) 1/4
(B) 1/2
(C) 3/4
(D) 1

Answer: (C) 3/4

11. In the adjoining figure, PA and PB are tangents to a circle with center O such that ∠P = 90°. If AB = $3\sqrt{2}$ cm, then the diameter of the circle is:



(A) $3\sqrt{2}$ cm

(B) $6\sqrt{2}$ cm

(C) 3 cm

(D) 6 cm

Answer: (D) **6 cm**

12. If x = cos 30° - sin 30° and y = tan 60° - cot 60°, then

(A) x=y (B) x>y (C) x<y (D) x> 1, y <1

Answer: (C) x<y

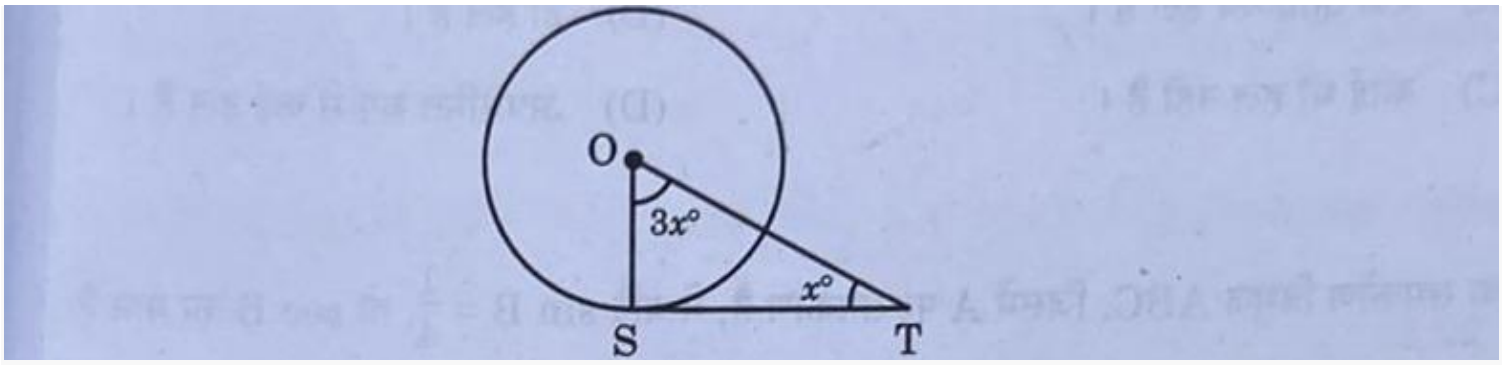
13. For a circle with center O and radius 5 cm, which of the following statements is true?

P: Distance between every pair of parallel tangents is **5 cm**.
Q: Distance between every pair of parallel tangents is **10 cm**.
R: Distance between every pair of parallel tangents must be between **5 cm and 10 cm**.
S: There does not exist a point outside the circle from where the length of the tangent is **5 cm**.

(A) **P**
(B) **Q**
(C) **R**
(D) **S**

Answer: (B) **Q**

14. In the adjoining figure, TS is a tangent to a circle with center O. The value of 2x° is:



(A) 22.5
(B) 45
(C) 67.5
(D) 90

Answer: (B) 45°

15. A peacock sitting on the top of a tree of height 10 m observes a snake moving on the ground. If the snake is $10\sqrt{3}$ m away from the base of the tree, then the angle of depression of the snake from the eye of the peacock is

(A) 30°
(B) 45°
(C) 60°
(D) 90°

Answer: (A) 30°

16. If a cone of greatest possible volume is hollowed out from a solid wooden cylinder, then the ratio of the volume of remaining wood to the volume of the cone hollowed out is

(A) 1:1 (B) 1:3 (C) 2:1 (D) 3:1

Answer: (C) 2:1

17. If the mode of some observations is 10 and the sum of the mean and the median is 25, then the mean and the median respectively are

(A) 12 and 13 (C) 10 and 15 (B) 13 and 12 (D) 15 and 1

Answer: (B) 13 and 12

18. If the maximum number of students has obtained 52 marks out of 80, then,

(A) 52 is the mean of the data.

(B) 52 is the median of the data.

(C) 52 is the mode of the data.

(D) 52 is the range of the data.

Answer: (C) 52 is the mode of the data.

Directions: In Question Numbers 19 and 20, a statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct option from the following:

(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 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.

19. Assertion (A): For two prime numbers x and y (x < y), HCF(x, y) = x and LCM(x, y) =y.

Reason (R): HCF(x, y) ≤ LCM(x, y), where x, y are any two natural numbers.

Answer: (A) is incorrect, but (R) is correct.

20. In an experiment of throwing a die,

Assertion (A): Event E_1: getting a number less than 3 and Event E_2: getting a number greater than 3 are complementary events.

Reason (R): If two events E and F are complementary events, then P(E) +P(F) = 1.

Answer: (A) is incorrect, but (R) is correct

Set-3 Answer Key (Maths- STANDARD)

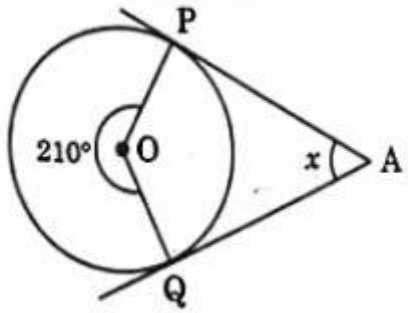
1. For a circle with centre O and radius 5 cm, which of the following statements is true?

P: Distance between every pair of parallel tangents is 5 cm.
Q: Distance between every pair of parallel tangents is 10 cm.
R: Distance between every pair of parallel tangents must be between 5 cm and 10 cm.
S: There does not exist a point outside the circle from which the length of the tangent is 5 cm.

(A) P
(B) Q
(C) R
(D) S

Answer: (B) Q

2. In the adjoining figure, AP and AQ are tangents to the circle with centre O. If reflex ∠POQ = 210°, the value of 2x is



(A) 30°
(B) 60°
(C) 120°
(D) 300°

Answer: (C) 120°

3. If x=2 $\sin 60° \cos 60°$ and y = $\sin^2 30° - \cos^2 30°$ and $x^2 = ky^2$, the value of k is

(A) √3
(B) √−3
(C) 3
(D) -3

Answer: (C) 3

4. A peacock sitting on the top of a tree of height 10 m observes a snake moving on the ground. If the snake is 10√3 m away from the base of the tree, then the angle of depression of the snake from the eye of the peacock is

(A) 30°
(B) 45°
(C) 60°
(D) 90°

Answer: (A) 30°

5. If a cone of greatest possible volume is hollowed out from a solid wooden cylinder, then the ratio of the volume of remaining wood to the volume of the cone hollowed out is

(A) 1:1 (B) 1:3 (C) 2:1 (D) 3:1

Answer: (C) 2:1

6. If the mode of some observations is 10 and the sum of the mean and the median is 25, then the mean and the median respectively are

(A) 12 and 13 (C) 10 and 15 (B) 13 and 12 (D) 15 and 1

Answer: (B) 13 and 12

7. If the maximum number of students has obtained 52 marks out of 80, then,

(A) 52 is the mean of the data.

(B) 52 is the median of the data.

(C) 52 is the mode of the data.

(D) 52 is the range of the data.

Answer: (C) 52 is the mode of the data.

8. The system of equations y+a=0 and 2x=b has

(A) No solution
(B) (−a,b/2) as its solution
(C) (b/2,−a) as its solution
(D) Infinite solutions

Answer: (C) (b/2,−a)

9. In a right triangle ABC, right-angled at A, if sin B =1/4, then the value of sec B is

(A) 4
(B) √15/4
(C) √15
(D) 4/√15

Answer: (D) 4/√15

10. √0.4 is a/an
(A) natural number
(B) integer
(C) rational number
(D) irrational number
Answer: (D) irrational number

11. Which of the following cannot be the unit digit of 8^n, where n is a natural number?
(A) 4
(B) 2
(C) 0
(D) 6
Answer: (C) 0

12. Which of the following equations does not have a real root?

(A) $x^2=0$
(B) 2x-1 =3
(C) $x^2 + 1 = 0$
(D) $x^3 + x^2= 0$

Answer: (C) $x^2 + 1 = 0$

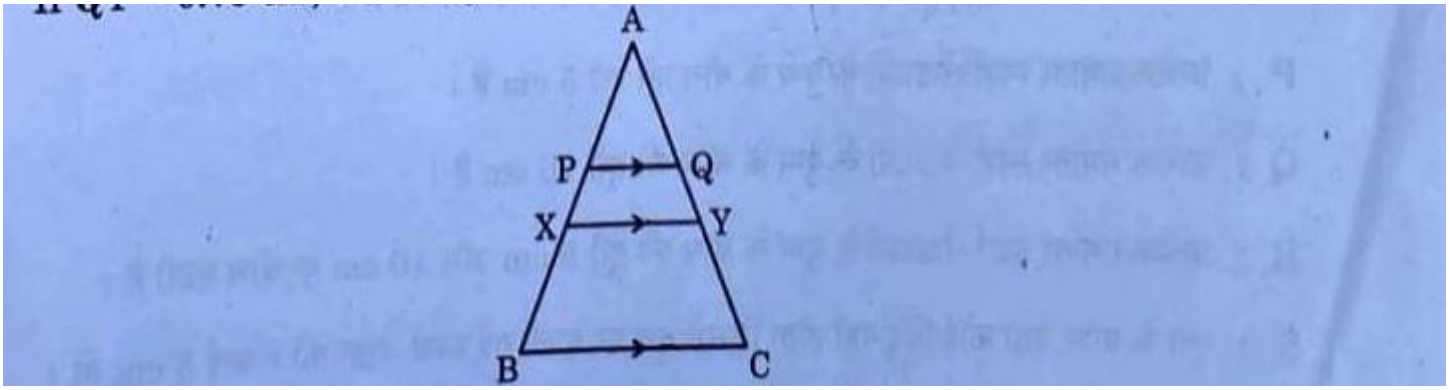
13. If the zeroes of the polynomial $ax^2+bx+2a/b$ are reciprocal of each other, then the value of b is

(A) 2
(B) 1/2
(C) -2
(D) −1/2

Answer: 2

14. The distance of the point P(3a, 4a) from the y-axis is
(A) 3a
(B) -3a
(C) 4a
(D) -4a
Answer: (A) 3a

15. In the adjoining figure, PQ || XY || BC, AP = 2 cm, PX = 1.5 cm, and BX = 4 cm. If QY = 0.75 cm, then AQ + CY =



(A) 6 cm
(B) 4.5 cm
(C) 3 cm
(D) 5.25 cm
Answer: (B) 4.5 cm

16. .Given **△ABC ~ △PQR**, **∠A = 30°** and **∠Q = 90°**. The value of **(∠R + ∠B)** is:
(A) 90°
(B) 120°
(C) 150°
(D) 180°

Answer: (C) 150°

17. Two coins are tossed simultaneously. The probability of getting at least one head is:

(A) 1/4

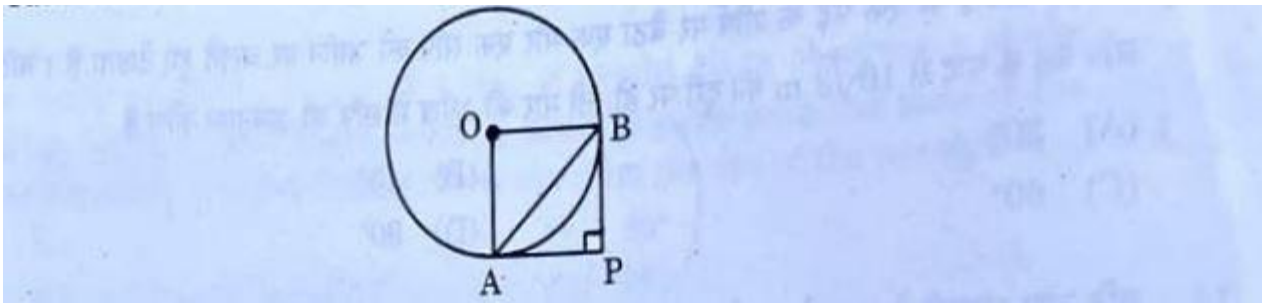
(B) 1/2

(C) 3/4

(D) 1

Answer: (C) 3/4

18. In the adjoining figure, PA and PB are tangents to a circle with center O such that $\angle P = 90°$. If $AB = 3\sqrt{2}$ cm, then the diameter of the circle is:



(A) $3\sqrt{2}$ cm

(B) $6\sqrt{2}$ cm

(C) 3 cm

(D) 6 cm

Answer: (D) 6 cm

In Question Numbers 19 and 20, a statement of **Assertion (A)** is followed by a statement of **Reason (R)**. Choose the correct option from the following:

(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.

19. Assertion (A): Event $\mathbf{E_1}$: Getting a number less than 3 and Event $\mathbf{E_2}$: Getting a number greater than 3 are complementary events.

Reason (R): If two events E and F are complementary events, then **P(E) + P(F) = 1**.

A**nswer:** (D) Assertion (A) is false, but Reason (R) is true.

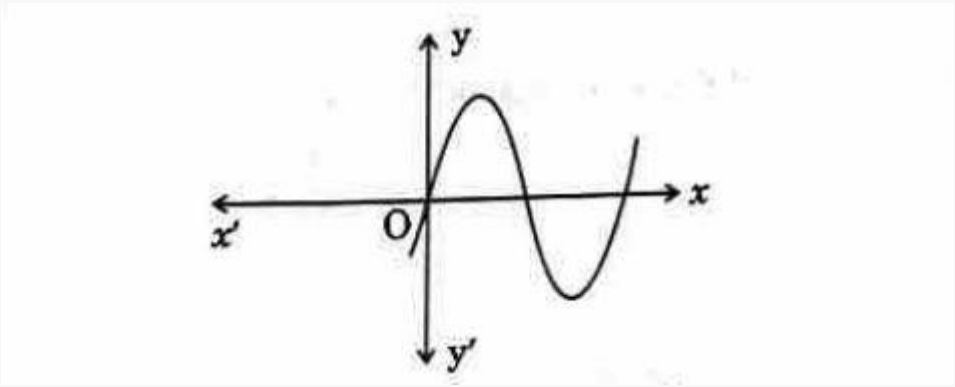
20. **Assertion (A):** For two odd prime numbers x and y, ($x \neq y$): LCM(2x,4y)=4xy

Reason (R): LCM(x,y) is a multiple of HCF(x,y).

Answer: (B) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).

Set-1 Answer Key (Maths- BASIC)

1. In the given figure, the graph of polynomial p(x) is shown. Number of zeroes of p(x) is



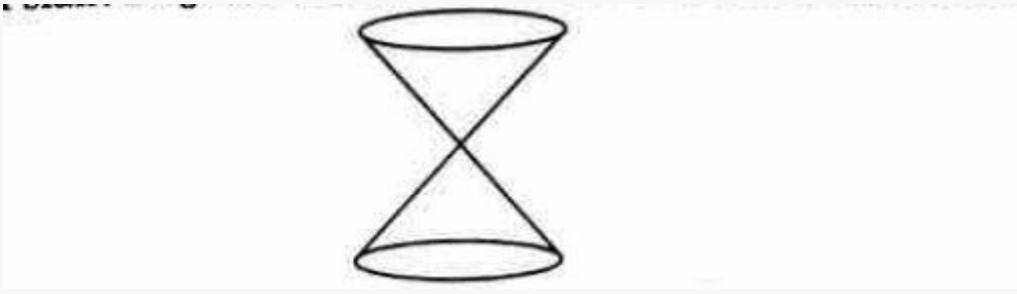
(A) 3
(B) 2
(C) 1
(D) 4
Answer: (A) 3

2. 22nd term of the A.P: 3, 1/2, −1/2, −3..... is
(A) 45/2
(B) -9
(C) −39/2
(D) -21
Answer: (C) −39/2

3. The line 2x−3y=62x - 3y = 62x−3y=6 intersects x-axis at

(A) (0, -2)
(B) (0, 3)
(C) (-2, 0)
(D) (3, 0)
Answer: (D) (3,0)

4. Two identical cones are joined as shown in the figure. If the radius of the base is 4 cm and the slant height of the cone is 6 cm, then the height of the solid is



(A) 8 cm
(B) $4\sqrt{5}$ cm
(C) $2\sqrt{5}$ cm
(D) 12 cm
Answer: (B) $4\sqrt{5}$ cm

5. The value of k for which the system of equations 3x−7y=1 and kx+14y=6 is inconsistent, is

(A) -6
(B) 2/3
(C) 6
(D) −3/2
Answer: (D) −3/2

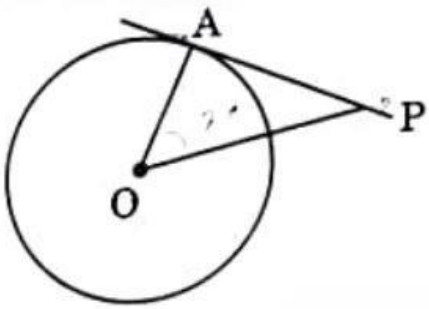
6. Two dice are rolled together. The probability of getting a sum more than 9 is

(A) 5/6
(B) 5/18
(C) 1/6
(D) 1/2
Answer: (B) 5/18

7. ABCD is a rectangle with its vertices at (2, -2), (8, 4), (4, 8), and (-2, 2) taken in order. Length of its diagonal is

(A) $4\sqrt{2}$
(B) $6\sqrt{2}$
(C) $4\sqrt{26}$
(D) $2\sqrt{26}$
Answer: (B) $6\sqrt{2}$

8. In the given figure, **PA is tangent** to a circle with center **O**. If **∠APO = 30°** and **OA = 2.5 cm**, then **OP is equal to**



(A) 2.5 cm
(B) 5 cm
(C) $5\sqrt{3}$
(D) 2 cm

Answer: (C) $5\sqrt{3}$

9. If the probability of happening of an event is **57%**, then the probability of non-happening of the event is:

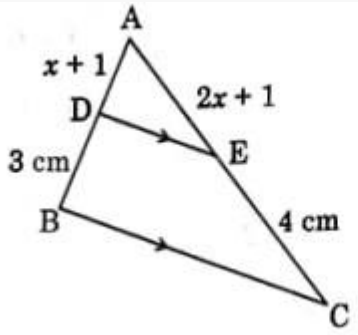
(A) 0.43
(B) 0.57
(C) 53%
(D) 1/57

Answer: (A) 0.43

10. OAB is a sector of a circle with centre O and radius 7 cm. If length of arc AB = 22/3 cm, then ∠AOB is equal to
(A) (120/7)°
(B) 45°
(C) 60°
(D) 30°

Answer: (C) 60°

11. In △ABC, DE || BC. If AE = (2x + 1) cm, EC = 4 cm, AD = (x + 1) cm, and DB = 3 cm, then value of x is



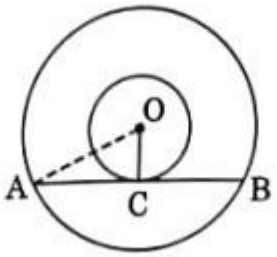
(A) 1
(B) 1/2
(C) -1
(D) 1/3

Answer: (B) 1/2

12. Three coins are tossed together. The probability that exactly one coin shows a head, is
(A) 1/8
(B) 1/4
(C) 1
(D) 3/8

Correct Answer: (D) 3/8

13. In two concentric circles centred at O, a chord AB of the larger circle touches the smaller circle at C. If OA = 3.5 cm, OC = 2.1 cm, then AB is equal to



(A) 5.6 cm
(B) 2.8 cm
(C) 3.5 cm
(D) 4.2 cm

Answer: (D) 4.2 cm

14. If $\sqrt{3}\sin\theta=\cos\theta$, then value of θ is
(A) $\sqrt{3}$
(B) $60°$
(C) $1/\sqrt{3}$
(D) $30°$

Correct Answer: (D) $30°$

15. To

15. To calculate mean of a grouped data, Rahul used assumed mean method. He used $d = (x - A)$, where A is assumed mean. Then $\bar{x}$ is equal to

(A) $A + \bar{d}$ (B) $A + h\bar{d}$

(C) $h(A + \bar{d})$ (D) $A - h\bar{d}$

Answer: (B)

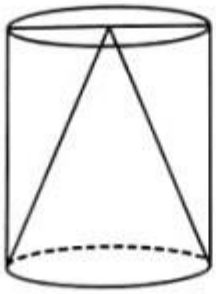
16. If the sum of first n terms of an A.P. is given by $S_n=n/2(3n+1)$, then the first term of the A.P. is
(A) 2
(B) 3/2
(C) 4
(D) 5/2

Answer: (A) 2

17. In $\triangle ABC$, $\angle B=90°$, If $AB/AC=1/2$, then, cos C is equal to
(A) 3/2
(B) 1/2
(C) $\sqrt{3}/2$
(D) $1/\sqrt{3}$

Answer: (D) $1/\sqrt{3}$

18. The volume of air in a hollow cylinder is 450 cm^3. A cone of the same height and radius as that of the cylinder is kept inside it. The volume of empty space in the cylinder is



(A) 225 cm^3
(B) 150 cm^3
(C) 250 cm^3
(D) 300 cm^3

Answer: (A) 225 cm^3

(Assertion – Reason based questions)

Directions: In question numbers 19 and 20, a statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct option:

(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 for Assertion (A).
(C) Assertion (A) is true, but Reason (R) is false.
(D) Assertion (A) is false, but Reason (R) is true.

19. Assertion (A): $(a+\sqrt{b})\cdot(a-\sqrt{b})$ is a rational number, where a and b are positive integers.
Reason (R): Product of two irrationals is always rational.

Correct Answer: (C) Assertion (A) is true, but Reason (R) is false.

20. Assertion (A): $\triangle ABC \sim \triangle PQR$ such that $\angle A = 65^\circ, \angle C = 60^\circ$. Hence $\angle Q = 55^\circ$.
Reason (R): Sum of all angles of a triangle is 180°.

Answer: (A) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).