

# SETH M. R. JAIPURIA SCHOOLS BANARAS PARAO CAMPUS

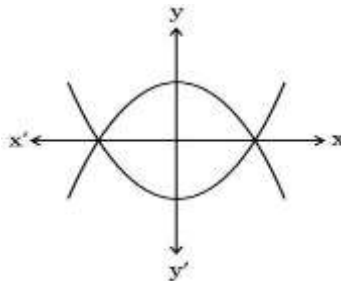
## WORKSHEET (2025-26)

Subject – MATHEMATICS

Class – X

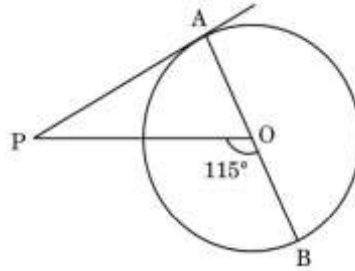
Name - \_\_\_\_\_ Roll No- \_\_\_\_\_ Section- \_\_\_\_\_

- If  $\alpha$  and  $\beta$  are the zeroes of polynomial  $3x^2 + 6x + k$  such that  $\alpha + \beta + \alpha\beta = -\frac{2}{3}$ , then the value of  $k$  is:  
(A) -8 (B) 8 (C) -4 (D) 4
- If  $x = 1$  and  $y = 2$  is a solution of the pair of linear equations  $2x - 3y + a = 0$  and  $2x + 3y - b = 0$ , then:  
(A)  $a = 2b$  (B)  $2a = b$  (C)  $a + 2b = 0$  (D)  $2a + b = 0$
- The mid-point of the line segment joining the points  $P(-4, 5)$  and  $Q(4, 6)$  lies on:  
(A)  $x$ -axis (B)  $y$ -axis  
(C) origin (D) neither  $x$ -axis nor  $y$ -axis
- If  $\theta$  is an acute angle and  $7 + 4\sin \theta = 9$ , then the value of  $\theta$  is:  
(A)  $90^\circ$  (B)  $30^\circ$  (C)  $45^\circ$  (D)  $60^\circ$
- The value of  $\tan^2 \theta - \left(\frac{1}{\cos \theta} \times \sec \theta\right)$  is:  
(A) 1 (B) 0 (C) -1 (D) 2
- If  $\text{HCF}(98, 28) = m$  and  $\text{LCM}(98, 28) = n$ , then the value of  $n - 7m$  is:  
(A) 0 (B) 28 (C) 98 (D) 198
- The tangents drawn at the extremities of the diameter of a circle are always:  
(A) parallel (B) perpendicular (C) equal (D) intersecting
- In triangles  $ABC$  and  $DEF$ ,  $\angle B = \angle E$ ,  $\angle F = \angle C$  and  $AB = 3DE$ . Then, the two triangles are:  
(A) congruent but not similar (B) congruent as well as similar  
(C) neither congruent nor similar (D) similar but not congruent
- If  $(-1)^n + (-1)^8 = 0$ , then  $n$  is:  
(A) any positive integer (B) any negative integer  
(C) any odd number (D) any even number
- Two polynomials are shown in the graph below. The number of distinct zeroes of both the polynomials is:



- (A) 3 (B) 5 (C) 2 (D) 4
- If the sum of first  $m$  terms of an  $AP$  is  $2m^2 + 3m$ , then its second term is:  
(A) 10 (B) 9 (C) 12 (D) 4
- Mode and Mean of a data are  $15x$  and  $18x$ , respectively. Then the median of the data is:  
(A)  $x$  (B)  $11x$  (C)  $17x$  (D)  $34x$

13. A card is selected at random from a deck of 52 playing cards. The probability of it being a red face card is:
- (A)  $\frac{3}{13}$  (B)  $\frac{2}{13}$  (C)  $\frac{1}{2}$  (D)  $\frac{3}{26}$
14. Which of the following is a rational number between  $\sqrt{3}$  and  $\sqrt{5}$  ?
- (A)  $1.4142387954012 \dots$  (B)  $2:32\overline{6}$  (C)  $\pi$  (D)  $1.857142$
15. If a sector of a circle has an area of  $40\pi$  sq. units and a central angle of  $72^\circ$ , the radius of the circle is:
- (A) 200 units (B) 100 units (C) 20 units (D)  $10\sqrt{2}$  units
16. In the given figure, PA is a tangent from an external point P to a circle with centre O. If  $\angle POB = 115^\circ$ , then  $\angle APO$  is equal to:



- (A)  $25^\circ$  (B)  $65^\circ$  (C)  $90^\circ$  (D)  $35^\circ$
17. A kite is flying at a height of 150 m from the ground. It is attached to a string inclined at an angle of  $30^\circ$  to the horizontal. The length of the string is:
- (A)  $100\sqrt{3}$  m (B) 300 m (C)  $150\sqrt{2}$  m (D)  $150\sqrt{3}$  m
18. A piece of wire 20 cm long is bent into the form of an arc of a circle of radius  $\frac{60}{\pi}$  cm. The angle subtended by the arc at the centre of the circle is:
- (A)  $30^\circ$  (B)  $60^\circ$  (C)  $90^\circ$  (D)  $50^\circ$

Questions number 19 and 20 are Assertion and Reason based questions.

- (A) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of the Assertion (A).  
 (B) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of the 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): The probability of selecting a number at random from the numbers 1 to 20 is 1.  
 Reason (R): For any event E, if  $P(E) = 1$ , then E is called a sure event.

20. Assertion (A): If we join two hemispheres of same radius along their bases, then we get a sphere.  
 Reason (R): Total Surface Area of a sphere of radius r is  $3\pi r^2$ .