CBSE CLASS – X

MATH ANSWER KEY

(CBSE DELHI)

Code No. (30/1/2)

Series LRH/1

SECTION – C (Set-2)

This answer key is as per the order of questions given in set – 2.

16. Prove that $4 - 5\sqrt{2}$ is an irrational number.

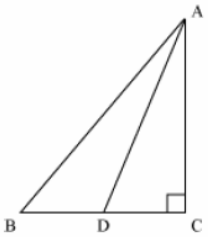
Ans. Proof

17. Cards bearing numbers 1, 3, 5, ..., 35 are kept in a bag. A card is drawn at random from the bag. Find the probability of getting a card bearing
    (i) a prime number less than 15.
    (ii) a number divisible by 3 and 5.

Ans. (i) $\frac{5}{18}$

(ii) $\frac{1}{18}$

18. In figure 3, ABC is a right triangle, right angled at C and D is the mid-point of BC. Prove that $AB^2 = 4AD^2 - 3AC^2$.



Ans. Proof

19. Point P divides the line segment joining the points A (2, 1) and B (5, –8) such that $\frac{AP}{AB} = \frac{1}{3}$.. If P lies on the line 2x – y + k = 0, find the value of k.

Ans. k = - 8

20. Prove the following

$$\frac{\tan A}{1-\cot A} + \frac{\cot A}{1-\tan A} = 1 + \tan A + \cot A$$

OR

Prove that following

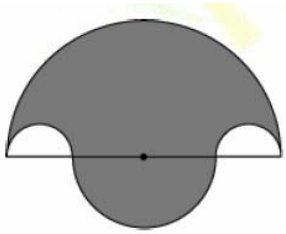
$$(\text{cosec } A - \sin A)(\sec A - \cos A) = \frac{1}{\tan A + \cot A}$$

Ans. Proof

21. Construct a triangle ABC in which AB = 5 cm, BC = 6cm and AC = 7cm. Construct another triangle similar to Δ ABC such that its side are $\frac{3}{5}$ of the corresponding sides of Δ ABC.

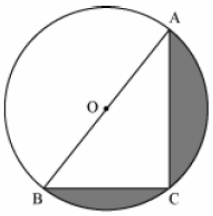
Ans. Construction

22. In figure 4, the boundary of shaded region consists of four semicircular arcs, two smallest being equal. If diameter of the largest is 14 cm and that of the smallest is 3.5 cm, calculate the area of the shaded region. $\left[\text{Use } \pi = \frac{22}{7}\right]$



OR

Find the area of shaded region in figure 5, if AC = 24 cm, BC = 10 cm and O is the centre of the circle. [Use $\pi = 3.14$]



Ans. Area of shaded region = 86.625 cm^2

OR

Area of shaded region = 145.33 cm^2

23. Prove that the points P(a, b + c), Q (b, c + d) and R (c, a + b) are collinear.

Ans. Proof

24. In an A.P., the sum of first ten terms is –150 and the sum of its next ten terms is –550. Find the A.P.

Ans. 3, -1, -5, -9, …….

25. The sum of numerator and denominator of a fraction is 3 less than twice the denominator. If each of the numerator and denominator is decreased by 1, the fraction becomes $\frac{1}{2}$. Find the fraction.

OR

Solve the following pair of equations:

$\frac{4}{x} + 3y = 8; \qquad \frac{6}{x} - 4y = -5$

Ans. $\frac{4}{7}$

OR

x = 2, y = 2