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**Grade: X MATHEMATICS-WORKSHEET 2**

1. Prove that is irrational.

2. Find out whether the following pair of linear equations are consistent or in consistent. (i) 3x + 2y =5, 2x – 3y = 7

(ii) 2x – 3y = 8; 4x – 6y = 9

(iii) 9x – 10 y =14.

(iv) 

3. Solve by formula method: 

4. Find the nature of the roots of .

5. Find the value of k for the equation has two equal roots .

6. Determine the A.P whose 3rd term is 5 and the 7th term is 9.

7. Check whether 301 is a term of the list of numbers 5, 11, 17, ...

8. Find the sum of the first 22 terms of the A.P 8, 3,-2,..

9. Find the distance between the points ( -5, 7) and (-1, 3).

10. Check whether (5, -2), (6, 4) and (7, -2) are collinear.

11. Prove: in a right triangle, the square of the hypotenuse is equal to the sum of the squares of the other two sides.

12. Find the value of ‘k’ if the points (2, 3), (4, k) and (6, -3) are collinear.

13. Find the relation between x and y if the points (x, y), (1, 2) and (7, 0) are collinear.

14. Find the area of the quadrilateral whose vertices are (-5, 7), (-4, -5), (-1, -6) and (4, 5).

15. If are acute angles such that sin B = sin Q then prove that .

16. Given 15 cot A = 8, find sin A, cos A, tan A.

17. If , find angles A and B.

18. Simplify: .

19. If sin3A = cos (A – 26 ), find the value of A.

20. Evaluate: 

21. Draw a right angle triangle in which the sides (other than hypotenuse) are of lengths 4 cm and 3 cm. Then construct another triangle whose sides are 5/3 times the corresponding sides of the given triangle.

22. Draw a pair of tangents to a circle of radius 5 cm which are inclined to each other at an angle of 60.

23. Find the area of the sector of a circle with radius 6 cm if angle of the sector is 60.

24. The length of the minute hand of a clock is 14 cm. Find the area swept by the minute hand in 5 minutes.

25. Find the mean.

C.I 100-150 150-200 200-250 250-300 300-350

f 4 5 12 2 2

26. Savita and Hamida are friends. What is the probability that both will have (i) different Birthdays (ii) same birthday.

27. Harpeet tosses two different coins simultaneously. What is the probability that she gets at least one head?

28. A carton consists of 100 shirts of which 88 are good, 8 have minor defects and 4 have major defects. Jimmy , a trader, will only accept the shirts which are good, but sujatha, another trader, will only reject the shirts which have major defects. One shirt is drawn at random from the carton. What is the probability that (i) it is acceptable by Jimmy (ii) it is acceptable by Sujatha

29. Find the zeros and verify the relationship: 

30. Find all the zeroes of , if two of its zeroes are .