

VISWABHARATI - GUDIVADA

WORK SHEET-2

Topics – Quadratic Equations Progression & Mensuration

Class: X

Time: 1 ½ Hr

Subject: Mathematics

Max.Marks: 35 M

Name _____ Class/Sec: _____ Roll No: _____

I. Each Question carries $\frac{1}{2}$ mark.

$30 \times \frac{1}{2} = 15 M$

Answer all the questions in one work or phrase

1. What is the quadratic equation of roots α and β
2. What is the condition to become $ax^2 + bx + c = 0$ is a quadratic equation
3. If k is a root of $ax^2 + bx + c = 0$ then what is the value of $ak^2 + bk + c$?
4. Ravi says that -2 is a root of $3x^2 + 13x + 14 = 0$. Do you agree with Ravi?
5. The speed of a boat in still water is 70 km/h and the speed of stream is x km/h. What is the boat's speed in upstream?
6. Simplify $x - \frac{1}{2x} = \frac{1}{3}$ as quadratic equation.
7. If a polygon has n sides then find the number of diagonals
8. Draw the rough graph of quadratic equation $ax^2 + bx + c = 0$ when $b^2 - 4ac < 0$
9. Write the Nature of roots of quadratic equation $x^2 - 7x + 5 = 0$
10. Write any one uses of quadratic functions.
11. Find the common difference of terms of A.P. $\sqrt{2}, \sqrt{8}, \sqrt{18}, \sqrt{32} \dots\dots$
12. Srinu says 2, 2, 2, 2 $\dots\dots$ are in A.P and also in G.P. Do you agree with srinu? Give reason.
13. If $8k + 4, 6k + 1$ and $2k + 12$ are in A.P then find k .
14. Make an A.P which has (-2) as the common difference.
15. In an A.P if $a_n = 9 - 5n$ then find the common difference.
16. Find the sum of first n odd nature number.
17. Find x so that $x, x + 5, x + 15$ are consecutive terms of a G.P?
18. Write the 3rd term of the G.P where $a = \sqrt{3}$ and $r = \frac{1}{\sqrt{3}}$
19. To know about a G.P what is the minimum information that we need?
20. Which term of the A.P 3, 8, 13, 18, $\dots\dots$ is 78?
21. What is the area of four walls of a cube with 15m side.
22. A cube of side 'a' units is vertically into two values. What is the total surface area of each half
23. The curved surface area of a cone is 308 cm^2 and its base radius is 7 cm then find its slant height?
24. Find the length of the longest pole that can be kept in a room of dimensions $12\text{m} \times 9\text{m} \times 8\text{m}$?
25. Write the formula to find value of prism.
26. Write the combinations of solids involves in a shuttle cock.
27. The length of equator of a globe is 44m. Find the radius of Globe.
28. The lateral surface area of a cylinder is equal to the CSA of a cone. If the radius be same, find the ratio of height of cylinder and slant height of the cone.
29. If basic circumference of a cylinder is 220 cm and height is 63 cm then what is its CSA?
30. If the base of a right pyramid is a square of side 4cm and its height is 8cm then find the volume of the pyramid?

II. Each Question carries 1 Mark**20 × 1 = 20 M**

31. Rohan's mother is 26 years older than him. The product of their ages after 3 years will be 360 years. Represent in the form of quadratic equation.
32. If α and β are the roots of $x^2 - 2x + 3 = 0$ then find $\frac{1}{\alpha^2} + \frac{1}{\beta^2}$
33. The sum of a number and its reciprocal is $\frac{10}{3}$ then what is that number
34. Find the value of k in the quadratic equation $10x^2 - 20x + k = 0$ when its roots are equal
35. What is the discriminant of the quadratic equation $x^2 - 7x + 2 = 0$
36. Find the roots of $3(x - 4)^2 - 5(x - 4) = 12$
37. How many three digit numbers are divisible by 7?
38. Explain the benefits of evaluating the discriminant of a quadratic equation before attempting to solve it. What does its value signifies?
39. Find the 20th term the end of the A.P: 3, 8, 13,253
40. If the sum of first n terms of an A.P is $4n - n^2$. Find nth term.
41. The 17th term of an A.P exceeds its 10th term by 7. Find the common difference.
42. Which term of the G.P: 2, $2\sqrt{2}$, 4, Is 128?
43. In a G.P the 3rd term is 24 and 6th term is 192. Find the 10th term.
44. A cylinder and cone have bases of equal radii and height of cone is half of the height of cylinder. Find the ratio of their volumes.
45. A sphere is inscribed in a cylinder. Is the surface of the sphere equal to the curved surface of cylinder? If yes explain how?
46. Find the volume of the largest right circular cone that can be cut out of cube whose edge is 7cm.
47. A solid hemisphere of radius 8cm is melted and recast into x spheres of radius 2cm each. Find x?
48. If ratio of volumes of two spheres is 125 : 216 then find the ratio of their curved surface areas respectively.
49. The length, breadth and height of a cuboid are $(\log 500 + \log 20)$, $(\log 800 - \log 8)$ and $\log 10$ respectively. Find the L.S.A of the cuboid.
50. The inner and outer radius of a hemisphere is 2cm & 3cm. Find its volume.