

All questions carry equal marks.

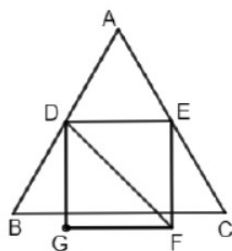
Total Marks 100

1. Average score of A, B, C, D and E is 36. A scores 45, C scores 41, D and E score equal runs. Score of B is 2 less than D . Find B 's score.
2. If $a = -2, b = 3, c = 4$, then find the largest number among the following four.
 $2abc, -2a^2b^2c^2, -2abc, a^3b^3c^3$.
3. Four squares A, B, C and D are placed inside each other. A is the largest square. Area of square B is 10% less than square A . Area of square C is 10% less than square B and so on. Area of square A is 1000 sq. units. Find side of square D .

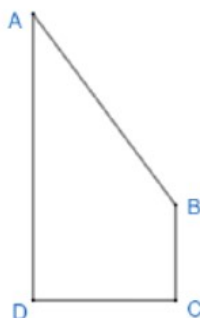
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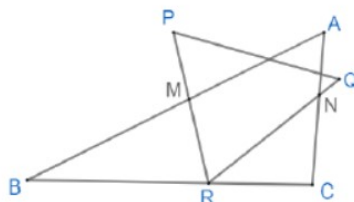
4. If $4^m = 256$, then $4^{m-2} = ?$
5. $\triangle ABC$ is an equilateral triangle. $\square DEFG$ is a square. D and E are midpoints of segments AB and AC respectively. Perimeter of $\triangle ABC$ is 42 cm. Find $(DF)^2$.



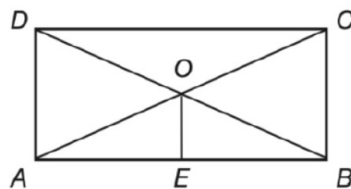
6. A librarian had to arrange some new books in the library. He arranged $\frac{4}{9}$ th of the total books and another 5 books in the morning and the rest in the evening. He realized that he had arranged equal number of books in the morning and evening. Find the total number of books.
7. $m\angle C = m\angle D = 90^\circ, AB : CD = 5 : 3, AD : BC = 3 : 1, BD^2 = 8125$, Find CD .



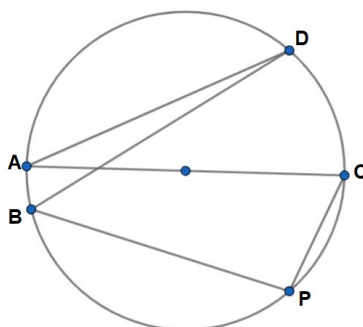
8. A number $133a6$ is divisible by 84 . Find a
9. Samar can do a piece of work in 30 days. Amar does $\frac{1}{20}$ of the same work in 1 day. If Samar and Amar work together, how many days will they require to complete the same piece of work.
10. $(50 + 48 + 46 + \dots + 4 + 2) - (1 + 3 + 5 + \dots + 47 + 49) = K$. Find K .
11. If a number is multiplied by 3 and 12 is added to the product and the sum is divided by 5, the result is 4 less than the number. Find the number.
12. In the given figure, $m\angle B = 26^\circ$. $BM = BR$ and $RC = NC$, $\triangle PQR$ is an equilateral triangle. Find $m\angle A$



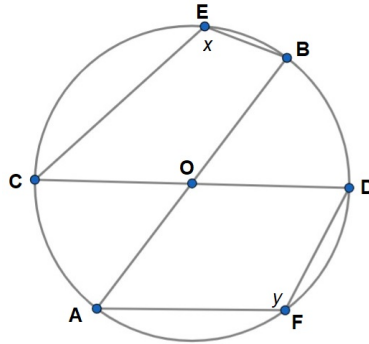
13. $\frac{1}{5^{-y}} = 8$ and $5^{-x} = \frac{1}{3}$, Find the value of 5^{x+y} .
14. Find the angle between the minute and hour hand of a clock at 12:10 pm.
15. $\frac{2x-2}{1-x} - \frac{3(3x-13)}{6x-6} + \frac{2x+3}{x-1} = 1$. Find x
16. Find the smallest natural number to be subtracted from 2025 so that we get a perfect square.
17. In the given rectangle $ABCD$, the sum of the lengths of two diagonals equals 52 units, and E is a point in AB , such that OE is perpendicular to AB . Find CD if $OE = 5$ units.



18. In the given figure (not to scale), AC is the diameter of the circle and $\angle ADB = 90^\circ$, then find $\angle BPC$.



19. In the following figure, $\overline{AB}$ and $\overline{CD}$ are diameters. O is the centre of the circle. If $m\angle CEB = x$ and $m\angle AFD = y$ and $x + y = 250$, find $m\angle AOC$.



20. A and B travelled the same distance at 9 km/hr. and 10 km/hr. respectively. If A required 36 minutes more than B then find the distance travelled by each of them in Kms.

Answer Key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
30	48	27	16	98	90	75	5	12	25	16	60	24	55	5	89	24	99	70	54