Quant Mega Quiz for SSC CGL Tier - 2

Q1. If $a^2 + 2 = 2a$, find $a^5 - a^4 + a^3 + a^2 + 2$

(a) 0
(b) 1
(c) -1
(d) $\sqrt{3}$

Q2. If $x + \frac{1}{x} = 1$, then find $x^{55} + \frac{1}{x^{55}}$

(a) 1
(b) 0
(c) -1
(d) -2

Q3. If $ab + bc + ca = 17$, $a + b + c = 11$ and $abc = -4$, find $a^3 + b^3 + c^3$

(a) 782
(b) 758
(c) 762
(d) 781

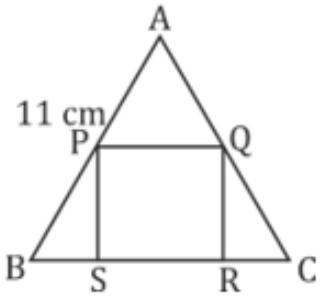
Q4.
If $a^4 + a^2b^2 + b^4 = 1868$, $a^2 + b^2 + ab = 16.4$
Find ab =?

(a) 2.8
(b) 2.4
(c) 2.2
(d) 2.6

Q5. If $a + \frac{1}{b} = 3$, $b + \frac{1}{c} = 2$, $c + \frac{1}{a} = \frac{7}{3}$, and a, b, c, are positive numbers, find $abc + \frac{1}{abc}$

(a) $6\frac{4}{9}$
(b) $6\frac{3}{7}$
(c) $6\frac{2}{3}$
(d) $6\frac{1}{3}$

Q6. In the following figure, find the area of square (approx.) given that the triangle is an equilateral triangle (Take $\sqrt{3}$ = 1.732)

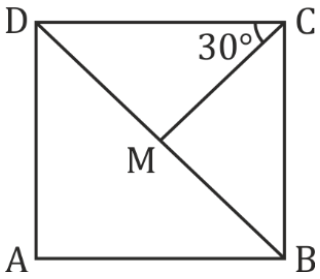


(a) 26.01 cm^2
(b) 24.32 cm^2
(c) 22.61 cm^2
(d) 32.01 cm^2

Q7. In an isosceles right angled triangle, whose perimeter is 4a cm, find the area of triangle?

(a) $6a^2 (4 - \sqrt{3})^2$
(b) $a^2 (\sqrt{2} - 1)^2$
(c) $3a^2 (3 + 2\sqrt{2})$
(d) $4a^2 (3 - 2\sqrt{2})$

Q8. In the given figure, ABCD is a square of side 10 cm. ∠DCM = 30°. What is the area (in cm^2) of triangle CMB?



(a) $16\sqrt{2} (\sqrt{2} + 1)$
(b) $25\sqrt{3} (\sqrt{3} - 1)$
(c) $16\sqrt{3} (\sqrt{3} + 1)$
(d) $25\sqrt{3} (\sqrt{2} - 1)$

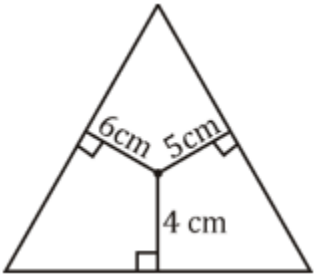
Q9. Two chords PQ and RS intersect at 90° if PS is 77 cm and RQ is 36 cm, find the area of circle?

(a) 1806.25π cm^2
(b) 1703.50π cm^2
(c) 1400 π cm^2
(d) 1890.61π cm^2

Q10. PQ and PR are the two tangents to a circle whose radius is 12 cm. If QPR = 120°, find $\sqrt{PQ^2 + PR^2}$?

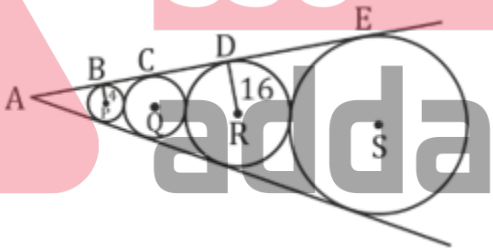
(a) $2\sqrt{5}$ cm^2
(b) $6\sqrt{6}$ cm^2
(c) $3\sqrt{5}$ cm^2
(d) $4\sqrt{6}$ cm^2

Q11. In the given figure, find the side of equilateral triangle.



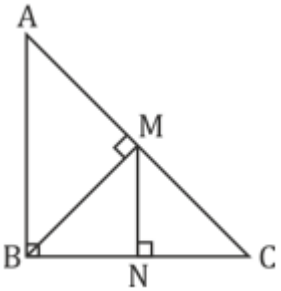
(a) $9\sqrt{3}$ cm
(b) $10\sqrt{3}$ cm
(c) $12\sqrt{3}$ cm
(d) $15\sqrt{3}$ cm

Q12. Four circle are placed as shown in figure, find the AE.



(a) $64\sqrt{3}$ cm
(b) $64\sqrt{2}$ cm
(c) $64\sqrt{5}$ cm
(d) $64\sqrt{7}$ cm

Q13. If AB = 12 cm and BC = 5 cm, find the length of MN?



(a) 300/169 cm
(b) 151/171 cm
(c) 76/99 cm
(d) 250/301 cm

Q14. A, B, C, D are points on the circumference of a circle of radius 5 cm, such that ABD is equilateral triangle and AC is a diameter of circle. Find the area of quadrilateral ABCD?

(a) $15\sqrt{3}$ cm^2

(b) $36\sqrt{2}$ cm^2

(c) $9\sqrt{2}$ cm^2

(d) $25\sqrt{3}$ cm^2

Q15. In a circle with centre O, PQRO is a parallelogram where Q is a point on mirror arc PR. What is the reflex angle POR?

(a) 120

(b) 210

(c) 300

(d) 240

Q16. In a triangle ABC, ∠B = 30°, ∠C = 45°. If BC = 40 cm, find the length of AB?

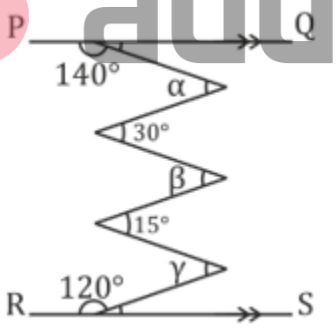
(a) $40(\sqrt{3} - 1)$ cm

(b) $40(\sqrt{2} - 1)$ cm

(c) $20(\sqrt{3} + 1)$ cm

(d) $20(\sqrt{3} - 1)$ cm

Q17. In the given figure PQ || RS, find α + β + γ .



(a) 145°

(b) 135°

(c) 120°

(d) 125°

Q18. Find distance between circumcenter and incentre given circum-radius is 5 cm and inradius is 1.5 cm.

(a) 4.18 cm

(b) 2.41 cm

(c) 3.16 cm

(d) 9.28 cm

Q19. PQ is a straight line of 13 units length. If P has the co-ordinates (2, 5) and Q has the co-ordinates (x, - 7) , then the value of x is

(a) –7
(b) 3
(c) 13
(d) 7

Q20. If the co-ordinates of three vertices of a square are· (0, 0), (0, –4) and (4, 0), then the co-ordinates of its fourth vertex is

(a) (4, 4)
(b) (–4, 4)
(c) (4, –4)
(d) (–4, –4)

Q21. If x runs are scored by A, y runs by B and z runs by C, then x : y = y : z = 3 : 2. If total number of runs scored by A, B and C is 342, the runs scored by each would be respectively

(a) 144, 96, 64
(b) 162, 108, 72
(c) 180, 120, 80
(d) 189, 126, 84

Q22. Rs 900 is divided among A, B, C; the division is such that 1/2 of A's money =1/3rd of B's money =1/4th of C's money. Find the amount (in Rs) received by A, B, C.

(a) 300, 400, 200
(b) 350, 450, 100
(c) 200, 300, 400
(d) 400, 150, 350

Q23. If Rs 126.50 is divided among A, B and C in the ratio of 2 : 5 : 4, the share of B exceeds that of A by

(a) Rs 36.50
(b) Rs 35.50
(c) Rs 34.50
(d) Rs 33.50

Q24. The average of first three numbers is double of the fourth number. If the average of all the four numbers is 12, find the 4th number.

(a) 16
(b) 48/7
(c) 20
(d) 18/7

Q25. If the average of 6 consecutive even numbers is 25, the difference between the largest and the smallest number is

(a) 8
(b) 10
(c) 12
(d) 14

Q26. A train goes from Ballygunge to Sealdah at an average speed of 20 km/hour and comes back at an average speed of 30 km/hour. The average speed of the train for the whole journey is

(a) 27 km/hr
(b) 26 km/hr
(c) 25 km/hr
(d) 24 km/hr

Q27. The arithmetic mean of 100 observations is 24.6 is added to each of the observations and, then each of them is multiplied by 2.5. Find the new arithmetic mean.

(a) 30
(b) 75
(c) 35
(d) 60

Q28. Sachin Tendulkar has a certain average for 11 innings. In the 12th innings he scores 120 runs and thereby increases his average by 5 runs. His new average is

(a) 60
(b) 62
(c) 65
(d) 66

Q29. The average of 11 results is 50. If the average of the first six results is 49 and that of the last six is 52, the sixth result is

(a) 48
(b) 50
(c) 52
(d) 56

Q30. By selling 25 metres of cloth a trader gains the selling price of 5 metres of cloth. The gain of the trader in % is

(a) 25
(b) 20
(c) 28
(d) 29