Q1. After the division of a number successively by 2,3 and 5, the remainders are 1,2 and 3, respectively. What will be the remainder, if 13 divides the same number (if the last quotient is 1)?
(a) 1
(b) 2
(c) 0
(d) 3

Q2. The height of one cone is 3 times the height of another cone, while its radius is half of the radius of other cone. If their total volume is 100 unit3,t3, then the difference in the volumes of the cones is _____ unit³.
(a) 13.4
(b) 15.5
(c) 14.3
(d) 12.5

Q3. A student's overall grade is determined by their scores in three subjects: Mathematics, English, and Science, with weights of 40%, 30%, and 30%, respectively. If the student scores 80, 90, and 75 in these subjects, respectively, the overall grade of the student is:
(a) 82
(b) 81.5
(c) 82.5
(d) 81

Q4. A sum of money becomes five times its original value in 15 years when invested at a certain simple interest rate. If the sum was invested twice the time at the same rate of interest, what would be the final amount?
(a) The money becomes 7 times its original value
(b) The money becomes 9 times its original value
(c) The money becomes 6 times its original value
(d) The money becomes 8 times its original value

Q5. If $\alpha + \beta = 45°$ and $(\tan \alpha + 1)(\tan \beta + 1) = 2x$ then x is:
(a) 2
(b) −1
(c) 0
(d) 1

Q6. Find the altitude (in cm) of side MT of triangle MNT with side MN = 36 cm, MT = 36 cm and NT = 48 cm.
(a) $16\sqrt{5}$
(b) $18\sqrt{3}$
(c) $12\sqrt{5}$
(d) $24\sqrt{3}$

Q7. Three people, A, B and C, invest in a business in the ratio 2 : 3 : 5. It was decided that 9% of the profits will go to charity. Ifthe total profit was ₹2,50,000, then find the share of C in the profit (in ₹).
(a) 1,26,950
(b) 1,11,650
(c) 1,21,850
(d) 1,13,750

Q8. Simplify the given expression. $\dfrac{[1.5 \times 1.5 \times 1.5 + 2.7 \times 2.7 \times 2.7 + 4.8 \times 4.8 \times 4.8 - 3 \times 1.5 \times 2.7 \times 4.8]}{[1.5 \times 1.5 + 2.7 \times 2.7 + 4.8 \times 4.8 - 1.5 \times 2.7 - 2.7 \times 4.8 - 4.8 \times 1.5]}$

(a) 10
(b) 12
(c) 14
(d) 9

Q9. A work can be finished by 8 men in 10 days working 6 hours a day or same can be finished by 20 qualified workers in 6 days working 8 hours a day. 2 men and 4 qualified workers work simultaneously 10 hours a day, the work will be finished in _____ days.
(a) 9
(b) 10
(c) 12
(d) 8

Q10. A bag contains 1 rupee, 50-paise and 25-paise coins in the ratio 3 : 4 : 6. If the total amount is ₹143, the number of 50-paise coins is:
(a) 66
(b) 90
(c) 88
(d) 132

Q11. What is the average of all the natural numbers from 1 to 59?
(a) 29.5
(b) 31
(c) 30.5
(d) 30

Q12. Two trains, A and B started travelling towards each other at the same time, from places P to Q and Q to P, respectively. After crossing each other, A and B took 9 hours and 16 hours to reach Q and P, respectively. If the speed of A was 56 km/h, then what was the speed (in km/h) of B?
(a) 38
(b) 42
(c) 40
(d) 46

Q13. The cost price of a fan is 4,400. A merchant wants to make a 24% profit by selling it. At the time of sale, merchant declares a discount of 12% on the marked price. Find the marked price.
(a) Rs. 2,600
(b) Rs. 2,060
(c) Rs. 6,200
(d) Rs. 6,020

Q14. The population of a place increased to 50,000 from 2016 to 2018 at the rate of 6% per annum, and continued the same trend for the next 3 years. If A is the population in 2016 and B is the population in 2020, both are approximated to the next possible integers, then the value of B – A is:
(a) 11680
(b) 16270
(c) 13220
(d) 12850

Q15. **If 0.4x + 0.16y = 1.7 and 0.3x + 0.12y = 3.4, then which of the following is correct?**
(a) The system has finitely many solutions but not unique.
(b) The system has infinitely many solutions.
(c) The system has no solution.
(d) The system has unique solution.

Q16. **In an isosceles triangle ABC, AB=AC. D is a point inside the triangle such that ∠BAD = 20° = ∠DCB, ∠CAD = 80°. The value of ∠ABC is:**
(a) 25°
(b) 15°
(c) 20°
(d) 40°

Q17. **What is the area of a quadrilateral ABCD, (shown below) in which sides AB and BC are equal, sides AD and CD are of lengths 5 cm and 13 cm, respectively, and side AD is perpendicular to the diagonal AC?**
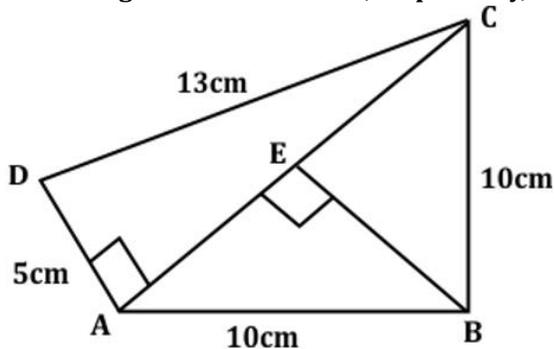

(a) 75 cm²
(b) 78 cm²
(c) 82 cm²
(d) 80 cm²

Q18. **What should be added to each term of the ratio 5: 11 so that the ratio becomes 3:5?**
(a) 6
(b) 4
(c) 2
(d) 5

Q19. **Vessel A contains milk and water in the ratio 4 : 5. Vessel B contains milk and water in the ratio 2 : 1. If x litres mixture of A is mixed with y litres mixture of B, then the ratio of milk to water in the mixture becomes 8 : 5. Find the ratio x : y.**
(a) 3 : 10
(b) 5 : 6
(c) 2 : 5
(d) 3 : 4

Q20. The product of $\sqrt{2}$ and $\sqrt{3}$ is:
(a) a rational number
(b) sometimes a rational number and sometimes an irrational number
(c) equal to 4
(d) an irrational number

Q21. If the radius of a sphere is increased by 2 cm, its surface area increases by 704 cm2m2. What was the radius of the sphere before the increase? (Use π =22/7)
(a) 12 cm
(b) 14 cm
(c) 11 cm
(d) 13 cm

Q22. In the given figure, O is the centre of the circle, AE is the diameter and ∠AOC = 100°.
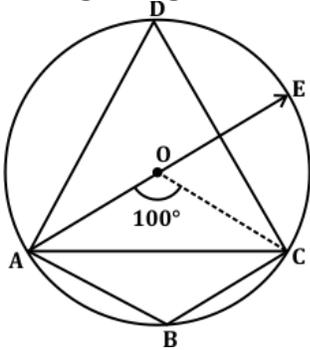
The value of ∠CDE + ∠CEA is:
(a) 90°
(b) 80°
(c) 60°
(d) 100°

Q23. If 330 persons can complete the construction of a shopping complex in 50 days, how many persons are required to complete the same work in 30 days?
(a) 550
(b) 450
(c) 198
(d) 505

Q24. If a circle whose centre is (2, 3) touches the line 4x + 3y - 7 = 0, then the radius of the circle is:
(a) 4 unit
(b) 1 unit
(c) 2 unit
(d) 3 unit

Q25. Naman bought few apples for Rs. 720 from a shop. He negotiated the price and the shopkeeper reduced it by Rs. 2 per apple. Due to this Naman could buy four more apples than what he had bought earlier. How many apples did he originally buy?
(a) 48
(b) 44
(c) 36
(d) 40

Q26. Let PQR be a right angled triangle, right-angled at R. Let PQ = 29 cm, QR = 21 cm and ∠Q = θ. Find the value of $\cos^2 \theta - \sin^2\theta$.
(a) 40/840
(b) 840/40
(c) 41/841
(d) 841/41

Q27. Shopkeeper A marks up his price for an item at 25% and offers a discount of 15%. The same item is marked at 20% by another shopkeeper B and sold at a discount of 12%. Who gets a better deal in terms of % profit and by what profit percentage he sells that item?
(a) B by 5.6%
(b) B by 0.65%
(c) A by 0.55%
(d) A by 6.25%

Q28. A theater sold 500 tickets to a concert. The tickets for adults cost $20 each, and the tickets for children cost $12 each. If the total revenue was $8,000, how many adult tickets were sold?
(a) 200
(b) 250
(c) 350
(d) 300

Q29. The average age of Raj and his father is 45 years. If the ages of the father and the grandfather of Raj are respectively two and three times that of Raj, then the age of Raj's grandfather is
(a) 75 years
(b) 90 years
(c) 81 years
(d) 84 years

Q30. The greatest value of $\sin^4\theta + \cos^4\theta$ is:
(a) 2
(b) 1
(c) 3
(d) 4

Solutions

S1. Ans.(a)	S7. Ans.(d)	S13. Ans.(c)	S19. Ans.(a)	S25. Ans.(c)
S2. Ans.(c)	S8. Ans.(d)	S14. Ans.(a)	S20. Ans.(d)	S26. Ans.(c)
S3. Ans.(b)	S9. Ans.(c)	S15. Ans.(c)	S21. Ans.(d)	S27. Ans.(d)
S4. Ans.(b)	S10. Ans.(c)	S16. Ans.(d)	S22. Ans.(a)	S28. Ans.(b)
S5. Ans.(d)	S11. Ans.(d)	S17. Ans.(b)	S23. Ans.(a)	S29. Ans.(b)
S6. Ans.(a)	S12. Ans.(b)	S18. Ans.(b)	S24. Ans.(c)	S30. Ans.(b)