

**Q1.** Simplify the following:

a.  $5\sqrt{6} \times \sqrt{48}$  1

b.  $(\sqrt{17} - 1) \times (\sqrt{17} + 17)$  1

**Q2.** It takes 5 boys or 8 girls complete a job in 26 days. How many days would it take 4 boys and 5 girls to complete the same job? 2

**Q3.** Find the cost of painting a wall is Rs 6.50 pm<sup>2</sup>. How much will it cost to paint a room with length 9.5m, width 6m and height 2.5m. The total area of the door and windows equals 12.5m<sup>2</sup> and will not be painted. 1

**Q4.** Workout the following giving your answers in its lowest term:

a.  $\frac{3}{5} - \frac{2}{8}$  1

b.  $\left[ \frac{2}{5} - \frac{1}{6} \right] + \left[ \frac{4}{9} - \frac{2}{3} \right]$  1

**Q5.** A city is split into six districts A, B, C, D, E and F. The population of each district (given to the nearest thousand) is: 16, 13, 17, 11, 18 and 10 respectively. Calculate what fraction of the city's population live in the two largest districts. 1

**Q6.** The value of a gold bracelet has increased in value by 6% during the past year. If today's value of the bracelet is Rs 1007 what was its value last year? 1

**Q7.** Suresh earns RS 19,500 a year before tax. He does not pay tax on the first RS 2800 that he earns. If the rate of tax is 18%, how much income tax does he pay a year? 1

**Q8 a.** Factorise: 1

$x^2 + x - 20.$

**Q8b.** Solve the equation. 1

$\frac{(5x + 2)}{(2x + 6)} + 7 = 3$

**Q9.** Solve the pair of simultaneous equations. 2

$x + 4y = 4$   
 $3x - 2y = 5$

**Q10.** A map scale is 1:50000. A distance on the map is measured to be 7.6 cm. What is the actual distance on the ground? Give your answer in metres. 1

**Q11.** A recipe for vegetable curry needs 500 grams of rice, and it feeds 6 people. How much rice would be needed for 10 people? **1**

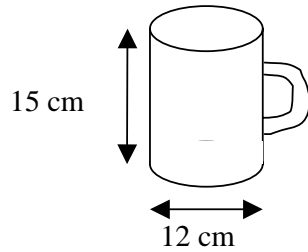
**Q12.** A cardboard box weighs 167 grams. It contains 67 smaller boxes, each weighing 127 grams. What is the total weight of the large box and its contents? **1**

**Q13.** Find the two solutions to the equation  $2x^2 - 6x = 3.5$  **2**

**Q14** Simplify: **1**

$$\frac{a^4b^2}{c^2} + \frac{a^2b^3}{c^3}$$

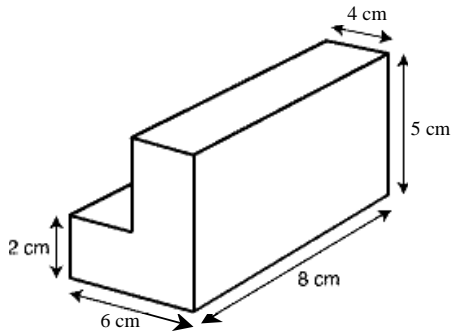
**Q15.**



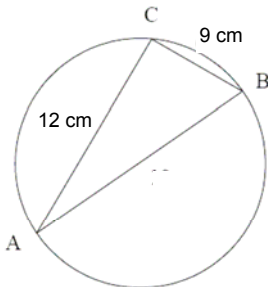
a. Calculate the volume of the cup (not drawn to scale). Given  $\pi = 3.14$ . **1**

b. If  $565.2 \text{ cm}^3$  of milk is poured into the cup, how high will it go up the cup? **1**

**Q16.** Calculate the volume of the object shown. **1**



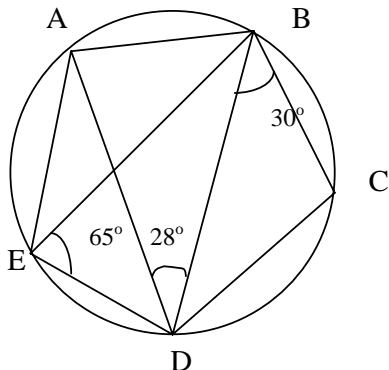
**Q17.** Calculate the diameter AB of the circle. **1**



**Q18.** The height of a cone is 15 cm and its slant height is 24 cm. Calculate the volume of the cone to 2 decimal places. **2**

**Q19.** A job had to be completed in 12 days. After 10 days only half of the work was completed. Adding another 16 men to the job allowed it to be completed on time. How many men were employed at first? 2

**Q20.** Calculate angles **BCD** and **ABD**. 2



**21.** Kumar is 3 years older than his wife, 24 years older than his son and 29 years older than his daughter. Kumar and his wife had been married for 2 years before their son was born. If their ages add up to 136, how old was Kumar when he got married? 1

**Q22.** Solve the following questions on distance, speed and time.

**a.** A car travels 30 km in 42 minutes, what is his average speed? Show your answers in km/hr to 2 decimal places. 1

**b.** A truck travels at an average speed of 44 km/hr for 1 hour 45minutes. How far has it travelled? 1

**Q23.** A train leaves station A at 10:48 am and arrives at station B at 14:33 am. If it travels at an average speed of 56 km/hr, how far is it between the two stations? Give your answer to the nearest Km. 1

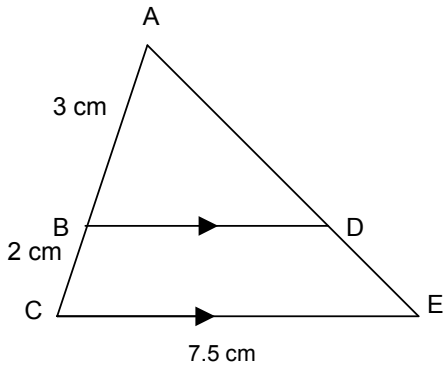
**Q24.** Three men invest Rs 15,000, Rs 35,000 and Rs 50,000 respectively into a business. The profits for the first year were Rs 90,000. How much did each receive? 2

**Q25.** The costs of manufacture of an article are divided among labour, materials and overheads in the ratio 10:4:1. If the materials for 100 articles cost Rs. 5000, what is the total cost to manufacture these 100 articles? 2

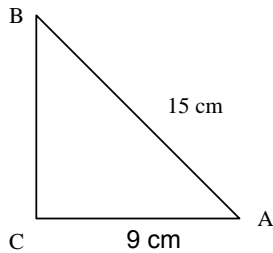
**Q26.** Evaluate. 1

$$\left( \frac{8^5 \times 8^3}{8^{10}} \right)^{-1/2}$$

**Q27.** The line BD is parallel to the line CE in the triangle shown below; calculate the length of line BD. 1



**Q28.** Calculate the length of the side AC, and write down, as fractions in their simplest forms, the ratios for  $\sin B$ ,  $\cos B$  and  $\tan B$ . 2



**Q29.** The following numbers have been collected from a survey. From this data find:

6	6	-8	2	18	-2	4	6	-4	8	4	12
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a. The Mode. 1

b. The Range. 1

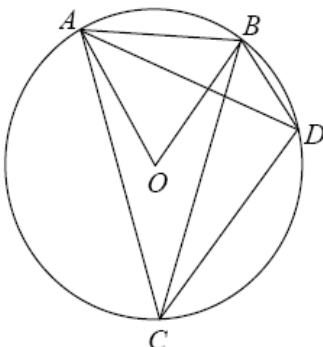
**Q30.** A box contains 50 pieces of fruit consisting of 20 apples, 25 oranges and 5 bananas. A piece of fruit is selected from the box at random.

a. Calculate the probability of selecting an apple. 1

b. Calculate the probability of selecting an orange followed by a banana. 1

**Q31.** Given that O is the centre of the circle and that angles  $\mathbf{AOB} = 75^\circ$ ,  $\mathbf{CBD} = 62^\circ$  and  $\mathbf{BAD} = 30^\circ$ .

a. Calculate angle  $\mathbf{ACB}$ . 1



b. Calculate angle **ABD**.

1

**Q32.** Using the formula that  $s = ut + \frac{1}{2}at^2$ , calculate **s** when  $a=9.8$ ,  $u=6.7$  and  $t = 4$ .  
(Show your answer to 2 decimal places). 1

**Q33.** Find the value of :

$$\left[ \frac{\sin 30}{\cos 30} \right] \cdot \tan 60.$$

1