

**Class: 7**  
**Subject: Mathematics**  
**Topic: ASK1507SA2**  
**No. of Questions: 30**

Q1. Which of the following is the ratio of 3Km to 300m?

- (a) 10:1
- (b) 1:10
- (c) 100 : 1
- (d) 1:100

Sol. (a)

$$\frac{3000\text{m}}{300\text{m}} = 10 : 1$$

Q2. If  $5:x = 3:4$ , what will be the value of 'x'?

- (a)  $3/20$
- (b)  $15/4$
- (c)  $20/3$
- (d)  $4/15$

Sol. (c)

$$\frac{5}{x} = \frac{3}{4} \Rightarrow x = \frac{20}{3}$$

Q3. In a city, 30% are females, 40% are males & remaining are children. What per cent are children?

- (a) 40%
- (b) 30%
- (c) 60%
- (d) 70%

Sol. (b)

$$\text{Children} = 100 - 30 - 40 = 30\%$$

Q4. Ram saves Rs. 400 from her salary. If this is 10% of her salary, what is her salary?

- (a) 40000
- (b) 9000
- (c) 4000
- (d) 10000

Sol. (c)

$$x \times \frac{10}{100} = 400 \Rightarrow x = 4000$$

Q5. You have Rs.2400 in your account & the interest rate is 5% per annum. After how many years would you earn Rs.240 as interest?

- (a) 1yr.
- (b) 2yrs.
- (c) 4yrs.
- (d) 8yrs.

Sol. (b)

$$240 = \frac{2400 \times 5 \times n}{100}$$
$$n = 2$$

Q6. The population of a city decreased from 25000 to 24500. Find the percentage decrease in population?

- (a) 4%
- (b) 3%
- (c) 2%
- (d) 1%

Sol. (c)

$$\text{Decrease} = \frac{25000 - 24500}{25000} = \frac{500}{25000} \Rightarrow 2\%$$

Q7. What rate gives Rs. 280 as interest on a sum of Rs.56000 in 2 years?

- (a) 2.5 %
- (b) 0.25%
- (c) 25%
- (d) 0.025%

Sol. (b)

$$280 = \frac{56000 \times r \times 2}{100}$$

$$r = 0.25\%$$

Q8. The circumference of a circle is 44 cm. What is its radius?

- (a) 42cm
- (b) 21cm
- (c) 7cm
- (d) 14cm

Sol. (c)

$$44 \text{ cm} = 2\pi r$$

$$r = \frac{44 \times 7}{2 \times 22} \Rightarrow 7 \text{ cm}$$

Q9. What is the area of the circle of radius 7cm ?

- (a) 49cm<sup>2</sup>
- (b) 22cm<sup>2</sup>
- (c) 154cm<sup>2</sup>
- (d) 308cm<sup>2</sup>

Sol. (c)

$$\text{Area} = \pi r^2$$

$$= \frac{22}{7} \times 7 \times 7$$

$$= 154 \text{ cm}^2$$

Q10. Diameter of a circular garden is 9.8cm. Which of the following is its area?

- (a)  $75.46\text{cm}^2$
- (b)  $76.46\text{cm}^2$
- (c)  $74.4\text{cm}^2$
- (d)  $76.4\text{cm}^2$

Sol. (a)

$$\begin{aligned}\text{Area} &= \pi r^2 \\ &= \frac{22}{7} \times \left(\frac{9.8}{2}\right)^2 \Rightarrow 75.46 \text{ cm}^2\end{aligned}$$

Q11. If each side of a square is 1m, which of the following is its area?

- (a)  $10\text{cm}^2$
- (b)  $100\text{cm}^2$
- (c)  $1000\text{cm}^2$
- (d)  $10000\text{cm}^2$

Sol. (d)

$$\begin{aligned}\text{area} &= (100 \text{ cm})^2 \\ &= 10000 \text{ cm}^2\end{aligned}$$

Q12. What is the area of a rectangle of dimensions 12cm x 10cm?

- (a)  $44 \text{ cm}^2$
- (b)  $120 \text{ cm}^2$
- (c)  $1440 \text{ cm}^2$
- (d)  $1200 \text{ cm}^2$

Sol. (a)

$$\text{area} = 2(l + b)$$

Q13. Which of the following is the coefficient of 'x' in  $3x^3 - 4x^2 + 7x - 8$  ?

- (a) 3
- (b) -4
- (c) 7
- (d) -8

Sol. (c)

Q14. What is the value of  $(24ab - 10b - 18a) - (30ab + 12b + 14a)$  ?

- (a)  $-(6ab + 22b + 32a)$
- (b)  $-54ab - 12b$
- (c)  $6ab + 22b + 32a$
- (d)  $6ab - 22b$

Sol. (a)

Q15. What is the value of  $(3x^2 - 5x + 6)$  at  $x=1$  ?

- (a) 3
- (b) 4
- (c) -8
- (d) 14

Sol. (b)

Q16. Which of the following is the exponential form of '243'?

- (a)  $3^2$
- (b)  $2^3$
- (c)  $3^5$
- (d)  $5^3$

Sol. (c)

$$243 = 3 \times 3 \times 3 \times 3 \times 3$$

Q17. Which of the following is the simplest form of  $(-3)^2 \times (-4)^3$

- (a) 576
- (b) -576
- (c) -64
- (d) -36

Sol. (a)

Q18. Which of the following is the standard form of 12700 ?

- (a)  $1.27 \times 10^4$
- (b)  $12.7 \times 10^4$
- (c)  $127 \times 10^2$
- (d)  $1270 \times 10$

Sol. (a)

Q19. Which of the following is the value of  $(-1)^{100} \times (-1)^{200}$  ?

- (a) 20000
- (b) -1
- (c) 1
- (d) 2

Sol. (c)

Q20. A regular pentagon has how many lines of symmetry ?

- (a) 3
- (b) 4
- (c) 5
- (d) 6

Sol. (c)

Q21. Which of the following letters of the English alphabet has reflectional symmetry about a vertical mirror?

- (a) A
- (b) B
- (c) C
- (d) D

Sol.

Q22. What is the order of rotational symmetry of a square?

- (a) 3
- (b) 4
- (c) 5
- (d) 6

Sol.

Q23. How many edges are there in a cuboid?

- (a) 3
- (b) 4
- (c) 5
- (d) 6

Sol.

Q24. Which of the following represents the sum total of the number of dots on the opposite faces of a die?

- (a) 9
- (b) 8
- (c) 7
- (d) 6

Sol.

Q25. In a computer lab, there are 3 computers for every 6 students. How many computers will be needed for 24 students?

- (a) 18
- (b) 12
- (c) 4
- (d) 8

Sol. (b)

3 computers = 6 students

$$\frac{3}{6} \times 24 = 12 \text{ student}$$

Q26. A and B together have Rs. 1210. If  $\frac{4}{15}$  of A's amount is equal to  $\frac{2}{5}$  of B's amount, how much amount does B have?

- (a) Rs. 460
- (b) Rs. 848
- (c) Rs. 550
- (d) Rs. 664

Sol. (b)

$$\frac{4}{15}A = \frac{2}{5}B$$

$$\Rightarrow A = \left(\frac{2}{5} \times \frac{15}{4}\right)B$$

$$\Rightarrow A = \frac{3}{2}B$$

$$\Rightarrow \frac{A}{B} = \frac{3}{2}$$

$$\Rightarrow A : B = 3 : 2$$

$$\therefore B's \text{ share} = \text{Rs.} \left(1210 \times \frac{2}{5}\right) = \text{Rs.} 484.$$



Q27. Two numbers are respectively 20% and 50% more than a third number. The ratio of the two numbers is :

- (a) 2 : 5
- (b) 3 : 5
- (c) 4 : 5
- (d) 6 : 7

Sol. (c)

Let the third number be  $x$ .

$$\text{Then, first number} = 120\% \text{ of } x = \frac{120x}{100} = \frac{6x}{5}$$

$$\text{Second number} = 150\% \text{ of } x = \frac{150x}{100} = \frac{3x}{2}$$

$$\therefore \text{Ratio of first two numbers} = \left(\frac{6x}{5} : \frac{3x}{2}\right) = 12x : 15x = 4 : 5.$$

Q28. A sum of money is to be distributed among A, B, C, D in the proportion of 5 : 2 : 2 : 3. If C gets Rs. 1000 more than D, what is B's share?

- (a) Rs. 500
- (b) Rs. 1500
- (c) Rs. 2000
- (d) None of these

Sol. (c)

Let the shares of A, B, C and D be Rs.  $5x$ , Rs.  $2x$ , Rs.  $4x$  and Rs.  $3x$  respectively.

$$\text{Then, } 4x - 3x = 1000$$

$$\Rightarrow x = 1000$$

$$\therefore \text{B's share} = \text{Rs. } 2x = \text{Rs. } (2 \times 1000) = \text{Rs. } 2000.$$

Q29. Seats for Mathematics, Physics and Biology in a school are in the ratio 5 : 7 : 8. There is a proposal to increase these seats by 40%, 50% and 75% respectively. What will be the ratio of increases seats?

- (a) 2 : 3 : 4
- (b) 6 : 7 : 8
- (c) 6 : 8 : 9
- (d) None of these

Sol. (a)

Originally, let the number of seats for Mathematics, physics and Biology be  $5x$ ,  $7x$  and  $8x$  respectively.

Number of increased seats are (140 % of  $5x$ ), (150% of  $7x$ ) and (175% of  $8x$ ).

$$\Rightarrow \left(\frac{140}{100} \times 5x\right), \left(\frac{150}{100} \times 7x\right) \text{ and } \left(\frac{175}{100} \times 8x\right)$$

$$\Rightarrow 7x, \frac{21x}{2} \text{ and } 14x$$

$$\therefore \text{The required ratio} = 7x : \frac{21x}{2} : 14x$$

$$\Rightarrow 14x : 21x : 28x$$

$$\Rightarrow 2 : 3 : 4$$

- Q30. In a mixture 60 litres, the ratio of milk and water 2: 1. If the ratio is to be 1: 2, then the quantity of water to be further added is:
- (a) 20 litres
  - (b) 30 litres
  - (c) 40 litres
  - (d) 60 litres

Sol. (d)

$$\text{Quantity of milk} = \left(60 \times \frac{2}{3}\right) \text{ litres} = 40 \text{ litres.}$$

$$\text{Quantity of water in it} = (60 - 40) \text{ litres} = 20 \text{ ; otre}$$

$$\text{New ratio} = 1: 2$$

Let quantity of water to be added further be  $x$  litres.

$$\text{Then, milk : water} = \left(\frac{40}{20+x}\right)$$

$$\text{Now, } \left(\frac{40}{20+x}\right) = \frac{1}{2}$$

$$\Rightarrow 20 + x = 80$$

$$\Rightarrow x = 60.$$

$$\therefore \text{Quantity of water to be added} = 60 \text{ litres.}$$