

STD 7 MATHS Model Paper

Answer Key

Activity 1: Multiple-Choice Questions (MCQs)

1. $36 : 48 = \frac{36}{48} = 3 : 4$

Correct Option: (a) 3:4

2. $2x + 3 = 11 \implies 2x = 11 - 3 \implies 2x = 8 \implies x = 4$

Correct Option: (b) 4

3. Area of triangle = $\frac{1}{2} \times 12 \times 8 = 48 \text{ cm}^2$

Correct Option: (a) 48 cm^2

4. $3^4 = 3 \times 3 \times 3 \times 3 = 81$

Correct Option: (b) 81

Activity 2: Fill in the Blanks

1. Perimeter = $2(l + b) = 2(10 + 5) = 2 \times 15 = 30 \text{ cm}$. Answer: 30 cm

2. Answer: Divisor

3. HCF of 18 and 24:

- Prime factorization:

$$18 = 2 \times 3^2, 24 = 2^3 \times 3.$$

$$\text{HCF} = 2 \times 3 = 6.$$

Answer: 6

4. Ratio of water to syrup = 3:1. For 12 liters of water:

$$\frac{12}{3} = 4 \text{ liters of syrup.}$$

Answer: 4 liters

Activity 3: Solve the Following

1. Divide 84 into 5:7:

$$\text{Total parts} = 5 + 7 = 12.$$

$$\text{Each part} = \frac{84}{12} = 7.$$

$$\text{First part} = 5 \times 7 = 35, \text{ Second part} = 7 \times 7 = 49.$$

Answer: 35 and 49

2. Simplify:

$$(a) 8 \times (6 - 3) = 8 \times 3 = 24.$$

$$(b) 20 \div 5 + 7 = 4 + 7 = 11.$$

Answers: 24, 11

3. Cost of 1 pencil = $\frac{25}{5} = ₹5$.

$$\text{Cost of 12 pencils} = 5 \times 12 = ₹60.$$

Answer: ₹60

Activity 4: Geometry

1. Area of rectangle = Length \times Breadth.

$$(a) 14 \times 8 = 112 \text{ cm}^2.$$

$$(b) 6 \times 3 = 18 \text{ cm}^2.$$

Answers: 112 cm^2 , 18 cm^2

2. Perimeter of square = $4 \times$ side:

$$4 \times 7 = 28 \text{ cm.}$$

$$\text{Area of square} = \text{side}^2:$$

$$7 \times 7 = 49 \text{ cm}^2.$$

Answers: Perimeter = 28 cm, Area = 49 cm^2

Activity 5: Powers and Exponents

1. Write as powers:

(a) $10 \times 10 \times 10 = 10^3$.

(b) $6 \times 6 = 6^2$.

Answers: 10^3 , 6^2 .

2. Simplify:

(a) $5^3 \div 5^2 = 5^{3-2} = 5^1 = 5$.

(b) $4^2 \times 4^3 = 4^{2+3} = 4^5 = 1024$.

Answers: 5, 1024

Activity 6: Word Problems

1. Ratio = 3:5, Total = 72.

Total parts = $3 + 5 = 8$.

Each part = $\frac{72}{8} = 9$.

First number = $3 \times 9 = 27$, Second number = $5 \times 9 = 45$.

Answers: 27 and 45

2. Ratio = 2:3:4, Total length = 18 m.

Total parts = $2 + 3 + 4 = 9$.

Each part = $\frac{18}{9} = 2$.

Lengths = $2 \times 2 = 4$ m, $3 \times 2 = 6$ m, $4 \times 2 = 8$ m.

Answers: 4 m, 6 m, 8 m

Activity 7: Practical Application

1.

(a) Ratio of boys to girls = $\frac{24}{16} = 3 : 2$.

(b) Total students = $24 + 16 = 40$.

Ratio of boys to total students = $\frac{24}{40} = 3 : 5$.

Answers: (a) 3:2, (b) 3:5

2. Speed = Distance \div Time:

$$\frac{240 \text{ km}}{4 \text{ hours}} = 60 \text{ km/h.}$$

Answer: 60 km/h