Proportional Reasoning-1

Standard difficulty · 20 questions · 40 marks · Time: 33 minutes

Name: _____ Date: _____ Score: ____ / 40

Show your working for Sections B and C. Answers are on the last page — try every question first!

Section A — Choose the correct answer — 8 × 1 = 8 marks

1. 21 : 9 in its simplest form is:
(a) 7 : 3 **(b)** 8 : 4 **(c)** 21 : 3 **(d)** 3 : 7

2. Which ratio is equivalent to 5 : 2?
(a) 30 : 2 **(b)** 11 : 8 **(c)** 12 : 30 **(d)** 30 : 12

3. A ratio between two quantities of the same kind has:
(a) the unit of the second quantity **(b)** the unit cm
(c) the unit of the first quantity **(d)** no unit

4. The ratio of 75 cm to 5 m is:
(a) 3 : 5 **(b)** 75 : 5 **(c)** 3 : 20 **(d)** 5 : 75

5. If 5 pencils cost Rs 85, one pencil costs:
(a) Rs 5 **(b)** Rs 17 **(c)** Rs 425 **(d)** Rs 22

6. Which pair of ratios is in proportion?
(a) 7 : 3 and 28 : 7 **(b)** 7 : 3 and 28 : 12
(c) 7 : 3 and 11 : 7 **(d)** 7 : 3 and 12 : 28

7. 9 : 8 = ____ : 24
(a) 27 **(b)** 12 **(c)** 24 **(d)** 72

8. A class has 13 boys and 16 girls. The ratio of boys to girls is:
(a) 13 : 16 **(b)** 13 : 29 **(c)** 16 : 13 **(d)** 14 : 16

Section B — Short answer — 8 × 2 = 16 marks

9. Find the ratio of 75 paise to Rs 9.

10. Divide Rs 288 between Meena and Sonu in the ratio 1 : 5.

11. Are 3, 8, 15 and 40 in proportion? Give a reason.

12. 7 notebooks cost Rs 182. Find the cost of 10 notebooks.

13. Find x if 5 : 6 = x : 30.

14. A rectangle is 12 cm long and 6 cm wide. Find the ratio of its breadth to its length.

15. Which ratio is greater: 3 : 4 or 3 : 5?

16. A bus travels 120 km in 4 hours. How far will it travel in 8 hours at the same speed?

Section C — Word problems — 4 × 4 = 16 marks

17. In a school choir the ratio of girls to boys is 4 : 3. There are 42 members in all. How many are girls and how many are boys?

18. A recipe uses 4 cups of rice for 7 people. How many cups are needed for 35 people?

19. On a map, 1 cm stands for 50 km. Two towns are 10 cm apart on the map. What is the real distance?

20. Pack A has 3 soaps for Rs 78. Pack B has 5 soaps for Rs 140. Which is the better buy?

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Answer key

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Q	Answer	Working
1	**(a) 7 : 3**	divide both by 3
2	**(d) 30 : 12**	multiply both by 6
3	**(d) no unit**	—
4	**(c) 3 : 20**	5 m = 500 cm
5	**(b) Rs 17**	85 ÷ 5
6	**(b) 7 : 3 and 28 : 12**	7 × 12 = 3 × 28
7	**(a) 27**	× 3
8	**(a) 13 : 16**	13 : 16, divide by 1
9	**1 : 12**	Rs 9 = 900 paise; 75 : 900
10	**Meena Rs 48, Sonu Rs 240**	6 parts = 288; 1 part = 48
11	**Yes**	3 × 40 = 120; 8 × 15 = 120
12	**Rs 260**	1 notebook = 26; 10 × 26 = 260
13	**x = 25**	6 × 5 = 30, so x = 5 × 5 = 25
14	**1 : 2**	6 : 12, divide by 6
15	**3 : 4**	3/4 = 15/20, 3/5 = 12/20
16	**240 km**	1 hour = 30 km; 8 × 30 = 240
17	**24 girls, 18 boys**	7 parts = 42; 1 part = 6
18	**20 cups**	35 ÷ 7 = 5; 4 × 5 = 20
19	**500 km**	10 × 50 = 500
20	**Pack A (Rs 26 per soap)**	A: 78 ÷ 3 = 26; B: 140 ÷ 5 = 28

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