

Boost Free Lessons - Year 8 Maths

Lesson 13: Simplifying Ratios

Name: _____ Grade: _____ Date: _____

Worked Example 1

Simplify the ratio 18 : 24

1. Find the highest common factor of 18 and 24. It is 6.
2. Divide both parts by 6: $18 \div 6 = 3$.
3. $24 \div 6 = 4$.
4. Both parts must be divided by the same number, every time.

= 3 : 4

Worked Example 2

Simplify the ratio 40 cm : 2 m

1. The two quantities are in different units, so convert one of them first.
2. $2 \text{ m} = 200 \text{ cm}$, so the ratio is 40 : 200.
3. Divide both parts by the highest common factor, 40.
4. A simplified ratio has no units written in the answer.

= 1 : 5

Remember: Both quantities must be in the **same unit** before you simplify, and the units are not written in the final answer. Divide every part by the same number.



Question 1: Simplify the following ratios.

1. $4 : 6$

2. $10 : 15$

3. $12 : 18$

4. $9 : 27$

5. $20 : 25$

6. $14 : 21$

7. $36 : 48$

8. $100 : 75$

9. $8 : 32$

10. $45 : 60$



Question 2: Simplify the following ratios.

1. 50 cm : 1 m

2. 300 g : 1.2 kg

3. 45 minutes : 2 hours

4. 2 : 4 : 8

5. 15 : 25 : 40

6. 250 mL : 1 L

7. 1.5 m : 90 cm

8. 6 : 9 : 12



Question 3: Answer the following questions.

1. A recipe uses 300 g of flour to 200 g of sugar. Write this ratio in simplest form.
2. A class has 12 boys and 16 girls. Write the ratio of boys to girls in simplest form.
3. In a ratio of 2 : 5, the second part is 40. Find the first part.
4. Divide \$180 in the ratio 4 : 5.
5. A map has a scale of 2 cm : 5 km. Two towns are 8 cm apart on the map. How far apart are they in real life?



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Answers: Simplifying Ratios**Question 1**

1. 2 : 3
2. 2 : 3
3. 2 : 3
4. 1 : 3
5. 4 : 5
6. 2 : 3
7. 3 : 4
8. 4 : 3
9. 1 : 4
10. 3 : 4

Question 2

1. 1 : 2
2. 1 : 4
3. 3 : 8
4. 1 : 2 : 4
5. 3 : 5 : 8
6. 1 : 4
7. 5 : 3
8. 2 : 3 : 4

Question 3

1. 3 : 2
2. 3 : 4
3. 16
4. \$80 and \$100
5. 20 km

