

Comparing Quantities

Mathematics · Class 7 · Topic-wise Practice Worksheet

TIME 45 minutes	QUESTIONS 18	TOTAL MARKS 24	MAX. SCORE ___ / 24
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Name: _____ Class/Sec: _____ Date: _____

INSTRUCTIONS

- There are **18 questions** in this worksheet. All questions are compulsory.
- Each question has four options (A), (B), (C) and (D). Exactly **one** option is correct.
- Questions 1–15 carry **1 mark** each. Questions 16–18 (Achievers Section) carry **3 marks** each.
- There is no negative marking. Use of a calculator is **not** allowed.
- Rough work may be done in the space at the side of each page.

Section A — Mathematical Reasoning

Q1–Q8 · 1 mark each

- $\frac{3}{8}$ written as a percentage is _____.
 (A) 30% (B) 83%
 (C) 38% (D) 37.5%
- 15% of 640 is _____.
 (A) 86 (B) 92
 (C) 96 (D) 102
- An article bought for ₹750 is sold for ₹900. The profit per cent is _____.
 (A) 15% (B) 20%
 (C) $16\frac{2}{3}\%$ (D) 25%
- The simple interest on ₹6,000 at 9% per annum for 2 years is _____.
 (A) ₹540 (B) ₹1,620
 (C) ₹1,200 (D) ₹1,080
- If the ratio of two numbers is 5 : 8 and their sum is 91, the smaller number is _____.
 (A) 35 (B) 42
 (C) 49 (D) 56
- A shirt marked at ₹1,400 is sold at a discount of 25%. Its selling price is _____.
 (A) ₹1,050 (B) ₹1,000
 (C) ₹350 (D) ₹1,150
- When a quantity increases from 250 to 300, the percentage increase is _____.
 (A) $16\frac{2}{3}\%$ (B) 20%
 (C) 25% (D) 50%

8. If 35% of a number is 84, the number is _____.

(A) 220

(B) 240

(C) 260

(D) 294

Section B — Everyday Mathematics and Reasoning

Q9–Q15 · 1 mark each

9. The pie chart shows how a family of monthly income ₹48,000 spends its money. How much is spent on **education**?

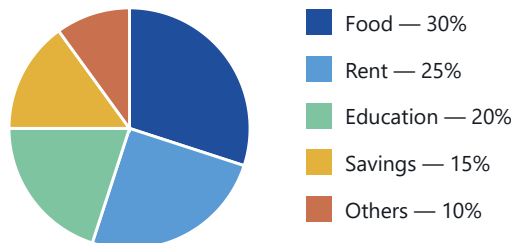


Fig. 9.1 — Monthly family budget

(A) ₹7,200

(B) ₹12,000

(C) ₹9,600

(D) ₹14,400

10. Using the same pie chart, what is the **angle** of the sector representing savings?

(A) 36°

(B) 90°

(C) 72°

(D) 54°

11. A bill for ₹2,500 attracts GST at 12%. What is the total amount payable?

(A) ₹2,800

(B) ₹2,700

(C) ₹2,512

(D) ₹3,000

12. A man buys a bicycle for ₹4,500 and sells it for ₹3,825. What is his loss per cent?

(A) 12%

(B) 15%

(C) $17\frac{1}{2}\%$

(D) 18%

13. In what time will ₹12,000 earn ₹2,160 as simple interest at 6% per annum?

(A) 2 years

(B) $2\frac{1}{2}$ years

(C) 3 years

(D) 4 years

14. In a school of 1,200 students, 45% are girls. How many boys are there?

(A) 540

(B) 600

(C) 660

(D) 720

15. ₹5,400 is divided among three people in the ratio 2 : 3 : 4. How much does the middle share come to?

(A) ₹1,200

(B) ₹2,700

(C) ₹2,400

(D) ₹1,800

16. Consider the following statements.

- (i) Profit and loss per cent are calculated on the cost price.
- (ii) A discount is calculated on the marked price.
- (iii) If the selling price equals the cost price, the profit per cent is 100%.

Which of the statements is/are correct?

- (A) (i) and (ii) only
- (B) (ii) and (iii) only
- (C) (i) and (iii) only
- (D) All three

17. The price of an article is increased by 25% and then the new price is decreased by 20%. What is the net change?

- (A) No change
- (B) A 5% increase
- (C) A 5% decrease
- (D) A 45% increase

18. A shopkeeper marks his goods 40% above cost price and then allows a discount of 25%. What is his profit per cent?

- (A) 10%
- (B) 5%
- (C) 15%
- (D) 20%

Answer Key

1	D	2	C	3	B	4	D	5	A
6	A	7	B	8	B	9	C	10	D
11	A	12	B	13	C	14	C	15	D
16	A	17	A	18	B				

Solutions

1. Answer: (D) 37.5%

Multiply by 100.

$$\frac{3}{8} \times 100 = \frac{300}{8} = \mathbf{37.5\%}.$$

2. Answer: (C) 96

$$15\% \text{ of } 640 = \left(\frac{15}{100} \right) \times 640 = \frac{3}{20} \times 640 = 3 \times 32 = \mathbf{96}.$$

3. Answer: (B) 20%

$$\text{Profit} = 900 - 750 = ₹150.$$

$$\text{Profit}\% = \left(\frac{150}{750} \right) \times 100 = \mathbf{20\%}.$$
 Profit per cent is always worked out on the cost price.

4. Answer: (D) ₹1,080

$$SI = (P \times R \times T) \div 100$$

$$= (6,000 \times 9 \times 2) \div 100 = 1,08,000 \div 100 = \mathbf{₹1,080}.$$

5. Answer: (A) 35

$$\text{Total parts} = 5 + 8 = 13, \text{ so } 1 \text{ part} = 91 \div 13 = 7.$$

$$\text{Smaller number} = 5 \times 7 = \mathbf{35}.$$
 (The larger is 56, and $35 + 56 = 91$. ✓)

6. Answer: (A) ₹1,050

$$\text{Discount} = 25\% \text{ of } 1,400 = ₹350.$$

$$\text{Selling price} = 1,400 - 350 = \mathbf{₹1,050}.$$

7. Answer: (B) 20%

$$\text{Increase} = 300 - 250 = 50.$$

$$\text{Percentage increase} = \left(\frac{50}{250} \right) \times 100 = \mathbf{20\%}.$$
 The increase is compared with the *original* value.

8. Answer: (B) 240

Let the number be n .

$$\left(\frac{35}{100} \right) \times n = 84$$

$$n = 84 \times \frac{100}{35} = \mathbf{240}.$$

$$\text{Check: } 35\% \text{ of } 240 = 84. \checkmark$$

9. Answer: (C) ₹9,600

Education takes 20% of the income.

$$20\% \text{ of } 48,000 = \left(\frac{20}{100} \right) \times 48,000 = \mathbf{₹9,600}.$$

10. Answer: (D) 54°

Savings is 15% of the whole.

$$\text{Angle} = 15\% \text{ of } 360^\circ = \left(\frac{15}{100} \right) \times 360^\circ = \mathbf{54^\circ}.$$

11. Answer: (A) ₹2,800

$$\text{GST} = 12\% \text{ of } 2,500 = \left(\frac{12}{100} \right) \times 2,500 = ₹300.$$

$$\text{Total} = 2,500 + 300 = \mathbf{₹2,800}.$$

12. Answer: (B) 15%

$$\text{Loss} = 4,500 - 3,825 = ₹675.$$

$$\text{Loss}\% = \left(\frac{675}{4500} \right) \times 100 = \mathbf{15\%}.$$

13. Answer: (C) 3 years

$$\begin{aligned} T &= (SI \times 100) \div (P \times R) \\ &= (2,160 \times 100) \div (12,000 \times 6) \\ &= 2,16,000 \div 72,000 = \mathbf{3 \text{ years}}. \end{aligned}$$

14. Answer: (C) 660

If 45% are girls, then 55% are boys.

$$55\% \text{ of } 1,200 = \left(\frac{55}{100} \right) \times 1,200 = \mathbf{660} \text{ boys.}$$

(Check: girls = 540, and $540 + 660 = 1,200$. ✓)

15. Answer: (D) ₹1,800

Total parts = $2 + 3 + 4 = 9$, so 1 part = $5,400 \div 9 = ₹600$.

Middle share = 3 parts = $3 \times 600 = \mathbf{₹1,800}$.

16. Answer: (A) (i) and (ii) only

Statements (i) and (ii) are both true. Statement (iii) is false — if $SP = CP$ there is neither profit nor loss, so the profit per cent is **0%**, not 100%. Hence **(i) and (ii)**.

17. Answer: (A) No change

Take the original price as ₹100.

After a 25% increase: $100 + 25 = ₹125$.

After a 20% decrease on ₹125: $125 - 25 = ₹100$.

The price is back where it started, so there is **no change**. This works because a 20% fall exactly undoes a 25% rise.

18. Answer: (B) 5%

Take the cost price as ₹100.

Marked price = $100 + 40 = ₹140$.

Discount = 25% of 140 = ₹35.

Selling price = $140 - 35 = ₹105$.

Profit = $105 - 100 = ₹5$ on a cost of ₹100, which is **5%**.