

WA3 Practice Paper

Decimals, percentages, rates and averages

30 marks | Suggested time: 45 minutes

Name: Class: Date:

Answer all questions. Show your working for Sections B and C. Calculators are not allowed. Give fractions in their simplest form unless stated otherwise.

School WA topic coverage may differ. These are original practice questions. Worked solutions follow the question paper.

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Section A: Multiple Choice (6 marks)

Choose one option and write its number in the answer space.

1. Express 0.65 as a percentage.

(1) 0.65%

(2) 6.5%

(3) 65%

(4) 650%

Answer: [1]

2. Express 35% as a fraction in its simplest form.

(1) $\frac{7}{20}$

(2) $\frac{7}{10}$

(3) $\frac{35}{10}$

(4) $\frac{3}{5}$

Answer: [1]

3. Find $4.8 \div 100$.

- (1) 0.0048
- (2) 0.048
- (3) 0.48
- (4) 480

Answer: [1]

4. A worker packs 12 boxes in 3 minutes at a constant rate. How many boxes does she pack in 1 minute?

- (1) 3
- (2) 4
- (3) 9
- (4) 36

Answer: [1]

5. The masses of 3 parcels are 2 kg, 4 kg and 6 kg. Find their average mass.

- (1) 3 kg
- (2) 4 kg
- (3) 6 kg
- (4) 12 kg

Answer: [1]

6. A \$50 shirt is sold at a 20% discount. What is its sale price?

- (1) \$10
- (2) \$20
- (3) \$30
- (4) \$40

Answer: [1]

Section B: Short Answer (12 marks)

Show your working and give units where needed.

7. Calculate 3.75×8 .

Answer: [2]

8. Calculate $14.4 \div 6$.

Answer: [2]

9. Find 15% of 240.

Answer: [2]

10. A bag costs \$80 before a 25% discount. Find its sale price.

Answer: [2]

11. The average of 4 numbers is 18. Three numbers are 12, 19 and 23. Find the fourth number.

Answer: [2]

12. A tap supplies 6 litres of water per minute at a constant rate. How long does it take to supply 90 litres?

Answer: [2]

Section C: Problem Sums (12 marks)

Show your working and give units where needed.

13. A shop had 250 notebooks. It sold 40% in the morning. It then sold 30% of the remaining notebooks in the afternoon. (a) How many notebooks were sold in the afternoon? [2] (b) How many notebooks were left at the end? [2]

Answer: [4]

14. Three friends paid an average of \$12.60 each for lunch. Two of them paid \$11.80 and \$13.40. (a) How much did the third friend pay? [2] (b) A fourth friend paid \$10.20. Find the new average payment. [2]

Answer: [4]

15. A bicycle rental shop charges \$5 for the first hour and \$2 for each additional half-hour or part thereof. (a) Find the charge for 2 hours 10 minutes. [2] (b) What is the longest rental duration that costs no more than \$13? [2]

Answer: [4]

End of question paper - Total: 30 marks

WA3 Suggested Worked Solutions

Other valid methods are accepted. Mark allocations are suggested for this practice paper.

Question 1 [1 mark]

Option 3. $0.65 \times 100\% = 65\%$.

Suggested marking: 1 mark for the correct option.

Question 2 [1 mark]

Option 1. $\frac{35}{100} = \frac{7}{20}$.

Suggested marking: 1 mark for the correct option.

Question 3 [1 mark]

Option 2. Dividing by 100 gives 0.048.

Suggested marking: 1 mark for the correct option.

Question 4 [1 mark]

Option 2. $12 \div 3 = 4$ boxes per minute.

Suggested marking: 1 mark for the correct option.

Question 5 [1 mark]

Option 2. $(2 + 4 + 6) \div 3 = 4$ kg.

Suggested marking: 1 mark for the correct option.

Question 6 [1 mark]

Option 4. Discount = 20% of \$50 = \$10. Sale price = \$50 - \$10 = \$40.

Suggested marking: 1 mark for the correct option.

Question 7 [2 marks]

$375 \times 8 = 3000$.

$3.75 \times 8 = 30$.

Suggested marking: 1 mark for valid working; 1 mark for the correct complete answer.

Question 8 [2 marks]

$144 \text{ tenths} \div 6 = 24 \text{ tenths}$.

Answer = 2.4.

Suggested marking: 1 mark for valid working; 1 mark for the correct complete answer.

Question 9 [2 marks]

$10\% \text{ of } 240 = 24; 5\% = 12.$

$15\% = 24 + 12 = 36.$

Suggested marking: 1 mark for valid working; 1 mark for the correct complete answer.

Question 10 [2 marks]

$\text{Discount} = 80 \div 4 = \$20.$

$\text{Sale price} = \$80 - \$20 = \$60.$

Suggested marking: 1 mark for valid working; 1 mark for the correct complete answer.

Question 11 [2 marks]

$\text{Total of 4 numbers} = 18 \times 4 = 72.$

$\text{Fourth number} = 72 - (12 + 19 + 23) = 18.$

Suggested marking: 1 mark for valid working; 1 mark for the correct complete answer.

Question 12 [2 marks]

$\text{Time} = \text{volume} \div \text{rate}.$

$90 \div 6 = 15 \text{ minutes}.$

Suggested marking: 1 mark for valid working; 1 mark for the correct complete answer.

Question 13 [4 marks]

(a) $\text{Morning sales} = 40\% \text{ of } 250 = 100.$

$\text{Remaining} = 250 - 100 = 150.$

$\text{Afternoon sales} = 30\% \text{ of } 150 = 45.$

(b) $\text{Left} = 150 - 45 = 105 \text{ notebooks}.$

Suggested marking: Parts (a) and (b): 1 method mark and 1 answer mark each.

Question 14 [4 marks]

(a) Total = $\$12.60 \times 3 = \37.80 .

Third payment = $\$37.80 - \$11.80 - \$13.40 = \12.60 .

(b) New total = $\$37.80 + \$10.20 = \$48.00$.

New average = $\$48.00 \div 4 = \12.00 .

Suggested marking: Parts (a) and (b): 1 method mark and 1 answer mark each.

Question 15 [4 marks]

(a) After the first hour, 70 minutes remain. This uses 3 chargeable half-hour blocks.

Charge = $\$5 + 3 \times \$2 = \$11$.

(b) Additional budget = $\$13 - \$5 = \$8$.

This buys 4 half-hours = 2 hours. Including the first hour, longest duration = 3 hours.

Suggested marking: Parts (a) and (b): 1 method mark and 1 answer mark each.