WA3 Revision Paper

Decimals, percentages and rate

30 marks | Suggested time: 50 minutes | No calculator

Answer all questions. Show working for Sections B and C. Give fractions in their simplest form. Diagrams are not drawn to scale.

Section A | 6 × 1 mark

1. A number divided by 100 gives a result which is 0.36 less than 4.08. What is the number? [1]

(1) 37.2 (2) 372

(3) 408 (4) 444

Answer:

2. Which statement is correct? [1]

(1) 28% of 750 is less than 35% of 600.

(2) 28% of 750 is 60 more than 35% of 600.

(3) 28% of 750 equals 35% of 600.

(4) 28% of 750 is 60 less than 35% of 600.

Answer:

WA3 Revision Paper

3. Printer A prints 84 pages in 3 minutes. Printer B prints 104 pages in 4 minutes. Both work at constant rates. How many more pages does A print than B in one minute? [1]

(1) 2 pages

(2) 4 pages

(3) 20 pages

(4) 28 pages

Answer:

4. Eight pieces, each 0.65 m long, are cut from a 6.48 m ribbon. What length of ribbon remains? [1]

(1) 0.63 m

(2) 1.28 m

(3) 1.83 m

(4) 5.20 m

Answer:

WA3 Revision Paper

5. Shop A sells a bag marked $80 at a 40% discount. Shop B sells the same bag marked $70 with $24 off. Which shop is cheaper, and by how much? [1]

(1) A, by $2

(2) B, by $2

(3) A, by $10

(4) B, by $10

Answer:

6. A locker costs $3 for the first 30 minutes and $2 for every additional 15 minutes or part thereof. How much does 82 minutes cost? [1]

(1) $9

(2) $11

(3) $13

(4) $15

Answer:

WA3 Revision Paper

Section B | 6 × 2 marks

7. Find the value of 18.72 - 2.46 × 6. [2]

Answer:

8. A box containing 12 identical jars has a mass of 7.68 kg. The empty box has a mass of 0.48 kg. Find the mass of one jar. [2]

Answer:

WA3 Revision Paper

9. Of 640 tickets, 25% are adult tickets and 35% are child tickets. The rest are family tickets, packed in groups of 8. How many groups of family tickets are there? [2]

Answer:

10. A pump must supply 1680 litres of water. It supplies 18 litres per minute for the first 40 minutes, then 24 litres per minute. How many minutes does it take altogether? [2]

Answer:

WA3 Revision Paper

11. A shop gives an immediate $8 discount for every complete $50 of the total marked price. Four lamps are marked at $36 each. How much must a customer pay for the four lamps? [2]

Answer:

12. A library has 600 books. Of these, 40% are science books and 15% are history books. The rest are art books. If 30 art books are damaged, how many undamaged art books are there? [2]

Answer:

WA3 Revision Paper

Section C | 3 × 4 marks

13. A stall has 960 badges. Of these, 35% are red and 25% are blue. All the green badges are packed in packets of 8. [4]

(a) How many packets of green badges are there? [2]

(b) The stall sells 36 packets at $2.75 each and all the remaining green packets at $2.40 each. How much does it collect from green badges? [2]

Answer:

WA3 Revision Paper

14. Copier A prints 24 pages per minute and copier B prints 18 pages per minute. A works alone for 6 minutes. B then starts, and both work until they have printed 900 pages altogether. They work at constant rates. [4]

(a) For how many minutes does A work altogether? [2]

(b) Each printed page uses one sheet. Paper is sold only in reams of 500 sheets at $4.60 per ream. Find the least cost of buying enough paper. [2]

Answer:

WA3 Revision Paper

15. A machine takes 12 minutes to make each batch of 45 cards. It must cool for 3 minutes after every batch except its final batch. It starts at 9.10 a.m. and stops at 11.00 a.m. It only makes complete batches. [4]

(a) What is the greatest number of batches it can make? [2]

(b) Of the cards made, 20% are used for samples. The rest are sold at $0.35 each. How much is collected? [2]

Answer:

WA3 Worked Solutions

1. 372

Correct option: (2)

4.08 - 0.36 = 3.72.

3.72 × 100 = 372.

2. Option 3

Correct option: (3)

28% of 750 = 210.

35% of 600 = 210. The amounts are equal.

3. 2 pages

Correct option: (1)

A: 84 ÷ 3 = 28 pages per minute.

B: 104 ÷ 4 = 26 pages per minute.

28 - 26 = 2 pages.

WA3 Worked Solutions

4. 1.28 m

Correct option: (2)

8 × 0.65 = 5.20 m.

6.48 - 5.20 = 1.28 m.

5. B, by $2

Correct option: (2)

A: $80 - 40% of $80 = $48.

B: $70 - $24 = $46.

Shop B is cheaper by $2.

6. $11

Correct option: (2)

82 - 30 = 52 minutes.

52 minutes uses 4 chargeable blocks.

$3 + 4 × $2 = $11.

WA3 Worked Solutions

7. 3.96

2.46 × 6 = 14.76.
18.72 - 14.76 = 3.96.

8. 0.6 kg

Mass of jars = 7.68 - 0.48 = 7.20 kg.
One jar = 7.20 ÷ 12 = 0.6 kg.

9. 32 groups

Family tickets: 100% - 25% - 35% = 40%.
40% of 640 = 256 tickets.
256 ÷ 8 = 32 groups.

WA3 Worked Solutions

10. 80 minutes

First 40 minutes: 18 × 40 = 720 litres.
Water left = 1680 - 720 = 960 litres.
960 ÷ 24 = 40 more minutes. Total = 80 minutes.

11. $128

Marked total = 4 × $36 = $144.
There are 2 complete groups of $50.
Discount = 2 × $8 = $16. Payment = $144 - $16 = $128.

12. 240 art books

Art books: 100% - 40% - 15% = 45%.
45% of 600 = 270.
Undamaged art books = 270 - 30 = 240.

WA3 Worked Solutions

13. (a) 48 packets; (b) $127.80

Green: 100% - 35% - 25% = 40%.
40% of 960 = 384 badges. 384 ÷ 8 = 48 packets. [2]
Remaining packets = 48 - 36 = 12.
36 × $2.75 + 12 × $2.40 = $99 + $28.80 = $127.80. [2]

14. (a) 24 minutes; (b) $9.20

A first prints 24 × 6 = 144 pages.
Pages left = 900 - 144 = 756.
Together: 24 + 18 = 42 pages per minute.
756 ÷ 42 = 18 minutes. A works 6 + 18 = 24 minutes. [2]
900 sheets need 2 reams: 2 × $4.60 = $9.20. [2]

15. (a) 7 batches; (b) $88.20

Time available = 1 h 50 min = 110 minutes.
7 batches need 7 × 12 + 6 × 3 = 102 minutes.
8 batches need 8 × 12 + 7 × 3 = 117 minutes, so only 7 fit. [2]
Cards made = 7 × 45 = 315.
Cards sold = 80% of 315 = 252.
252 × $0.35 = $88.20. [2]