Year 4 maths: Area of rectangles (Hard)

Maths · Measurement
Level: Hard

Student: _____ Date: _____

Instructions
- There are 10 questions. Read each one carefully.
- Write your answers on this paper. Use the space under a question to work it out.
- A grown-up can read a question aloud — that's fine.
- The answers are at the end. Check them together when you have finished.

Questions

1. Ivy paints 3 walls. Two walls are 6 m by 3 m and one wall is 4 m by 3 m. One litre of paint covers 3 m². How much paint does she need?

Circle one answer.

○ **A** 10 L ○ **B** 16 L ○ **C** 48 L ○ **D** 144 L ○ **E** 6 L

2. A floor is 5 m by 4 m. Some rugs are 2 m by 2 m. Max makes three claims: 1 The floor's area is 20 m². 2 Five rugs have the same total area as the floor. 3 The floor's perimeter is 20 m. Which claims are correct?

Circle one answer.

○ **A** claim 1 only
○ **B** claim 2 only
○ **C** claims 1 and 2 only
○ **D** claims 2 and 3 only
○ **E** claims 1, 2 and 3

3. A rectangle 8 cm by 6 cm is cut into squares that are 2 cm by 2 cm. How many squares are there?

Answer: ☐ squares

Working:

4. Shape M covers 14 squares. Shape N is 3 rows of 5 squares with 2 squares cut out. Which is true?

Circle one answer.

○ **A** N covers 1 more square than M

○ **B** N covers 15 squares

○ **C** M covers 3 more squares than N

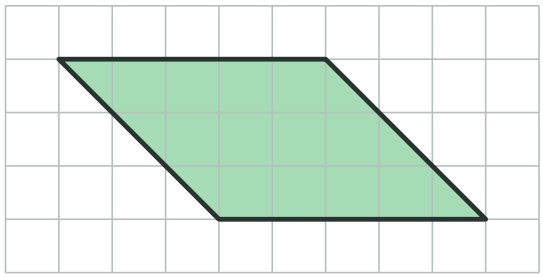
○ **D** M covers 1 more square than N

○ **E** They cover the same area

---

5. Each small square on this grid is 4 cm². The pieces at the slanted ends are half squares. What is the area of the shape?

Circle one answer.



○ **A** 56 cm²

○ **B** 15 cm²

○ **C** 48 cm²

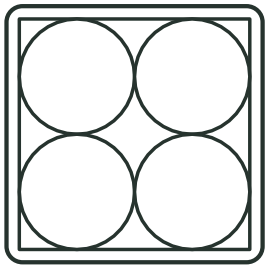
○ **D** 60 cm²

○ **E** 72 cm²

---

6. Four identical round biscuits fit exactly in a square tin, in 2 rows of 2. The radius of each biscuit is 5 cm. What is the area of the bottom of the tin?

Circle one answer.



○ **A** 400 cm²

○ **B** 80 cm²

○ **C** 200 cm²

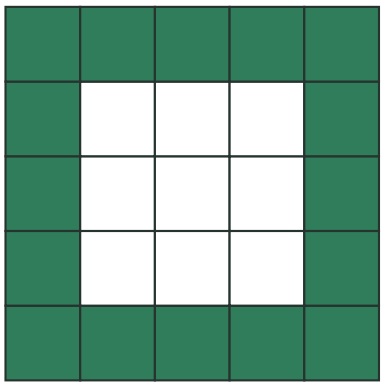
○ **D** 100 cm²

○ **E** 20 cm²

---

7. A white square is drawn inside a larger square on squared paper. The white square has an area of 36 cm². What is the area of the shaded part?

Circle one answer.



○ **A** 192 cm² ○ **B** 16 cm² ○ **C** 136 cm²
○ **D** 100 cm² ○ **E** 64 cm²

8. Two identical rectangles, each 9 cm long and 4 cm tall, overlap end to end. The whole strip is 15 cm long. What is the area of the overlap?

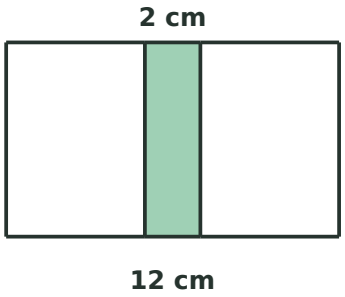
Circle one answer.



○ **A** 24 cm² ○ **B** 12 cm² ○ **C** 60 cm²
○ **D** 7 cm² ○ **E** 3 cm²

9. Two identical squares overlap in a row. The overlap is 2 cm wide and the whole shape is 12 cm long. What is the area of the overlap?

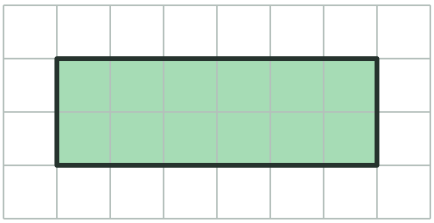
Circle one answer.



○ **A** 14 cm² ○ **B** 84 cm² ○ **C** 20 cm²
○ **D** 2 cm² ○ **E** 9 cm²

10. Ivy draws a garden plan on squared paper. Her rectangle measures 48 cm all the way round. What is its area?

Circle one answer.



○ **A** 108 cm² ○ **B** 36 cm² ○ **C** 144 cm²
○ **D** 12 cm² ○ **E** 48 cm²

Answer key

Year 4 maths: Area of rectangles (Hard) · Sheet 989884

1. B — 16 L

6 × 3 = 18 m², two of them make 36 m². 4 × 3 = 12 m². Total 48 m². 48 ÷ 3 = 16 L.

2. C — claims 1 and 2 only

Claim 1: 5 × 4 = 20 m². True. Claim 2: each rug is 4 m², and 5 × 4 = 20 m². True. Claim 3: 5 + 4 + 5 + 4 = 18 m. False.

3. 12 squares

4 squares fit along 8 cm and 3 fit along 6 cm. 3 rows of 4 = 12. (Check: 48 cm² ÷ 4 cm² = 12.)

4. D — M covers 1 more square than N

N: 3 × 5 = 15, take away 2 = 13 squares. M has 14, so M covers 1 more.

5. D — 60 cm²

Each row has 4 whole squares and 2 half squares, which make 1 more whole square: 5 squares a row. 3 rows: 15 squares. 15 × 4 = 60 cm².

6. A — 400 cm²

Each biscuit is 5 + 5 = 10 cm across. Two biscuits fit along each side, so the tin is 20 cm by 20 cm. 20 × 20 = 400 cm².

7. E — 64 cm²

The white square covers 3 × 3 = 9 squares, so each square is 36 ÷ 9 = 4 cm². The large square is 5 × 5 = 25 squares. Shaded: 25 − 9 = 16 squares. 16 × 4 = 64 cm².

8. B — 12 cm²

9 + 9 = 18 cm. 18 − 15 = 3 cm wide. 3 × 4 = 12 cm².

9. A — 14 cm²

Both sides added are 12 + 2 = 14 cm, so each square has 7 cm sides. The overlap is 2 cm wide and 7 cm tall: 2 × 7 = 14 cm².

10. A — 108 cm²

The rectangle is 6 squares long and 2 squares tall: 6 + 2 + 6 + 2 = 16 grid sides. 48 ÷ 16 = 3 cm for each grid side. So it is 18 cm long and 6 cm wide. Area: 18 × 6 = 108 cm².