P1—Find the Perimeter

3cm

2cm

5cm

4cm

10cm

6cm

Perimeter =
42cm

8cm

2cm

4cm

9cm

4cm

3cm

1cm

4cm

4cm

Perimeter =
46cm

P2—Find the Area

3cm

5cm

4cm

a

b

6cm

A = 20cm²
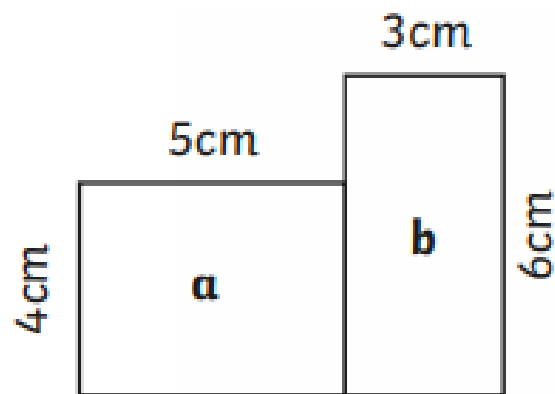
B = 18²

Total = 38cm²
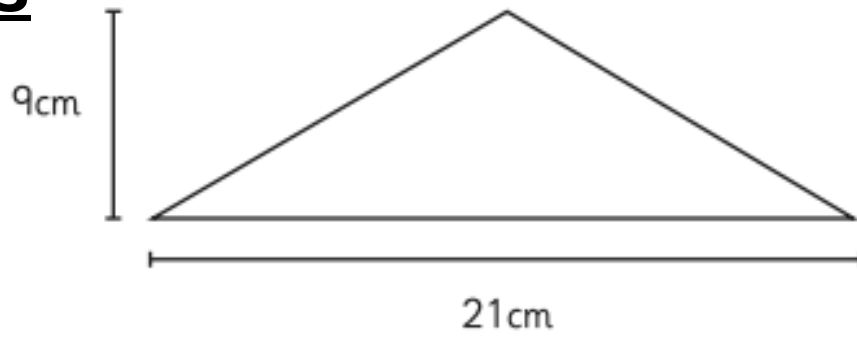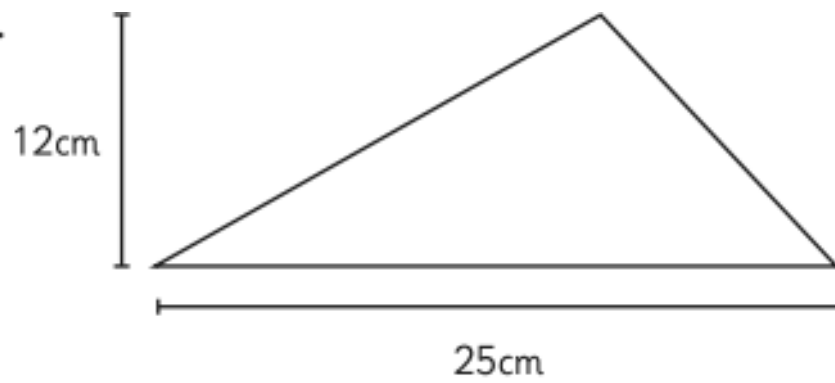
Area a: _____ cm²

Area b: _____ cm²   Total: _____ cm²

9cm

6cm

3cm

4cm

Total = 42cm²

Total: _____

P3

9cm

21cm

Area =

Area = 94.5cm²

12cm

25cm

Area =

Area = 150cm²

7cm

16cm

Area =

Area = 56cm²

P4

8cm

25cm

Area =

Area = 200cm²

7cm

14cm

Area =

Area = 98cm²

6cm   Area = 42cm²
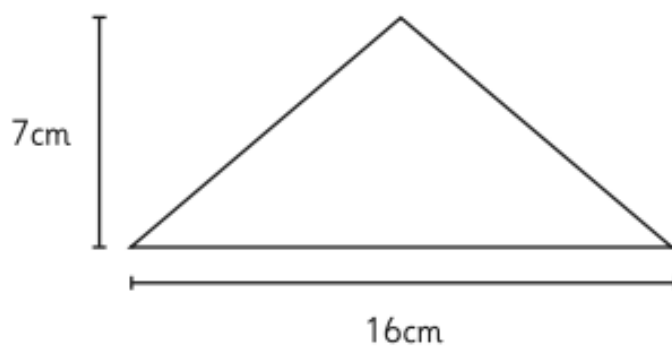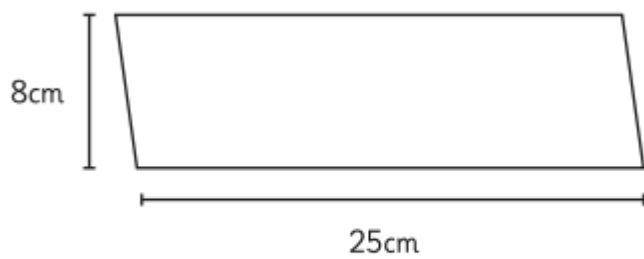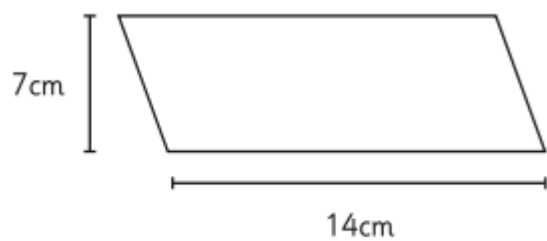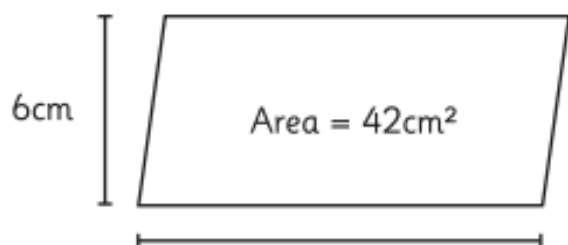
Base =

Side = 7cm

ARE—Answers

1)

    (a)   Any shape with an area of 10 cm², eg

            The shape need not be aligned with the grid.
            Accept slight inaccuracies in drawing provided intention is clear.

    (b)   Any rectangle with a perimeter of 10 cm, eg
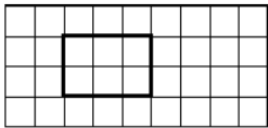
            The rectangle need not be aligned with the grid.

2)

Award **TWO** marks for the correct answer of 18

If the answer is incorrect, award **ONE** mark for evidence of appropriate working, eg

$50 \div 2 = 25$

$25 - 7 =$ wrong answer

OR

$7 \times 2 = 14$

$50 - 14 = 36$

$36 \div 2 =$ wrong answer

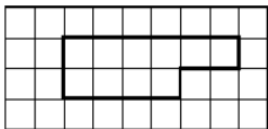   *Working must be carried through to reach an answer for the award of ONE mark.*

                                    Up to 2

3)

Sort the shapes into the Carroll diagram.

	Quadrilateral	Not a quadrilateral
Area of 12 cm²		
Area of 16 cm²		

4) Perimeter = 14 cm

Smallest Area = C

5) 20 cm

ARE—Answers

6)

32 cm

Any factor pair of 64, other than 8 and 8, i.e. any of the following:
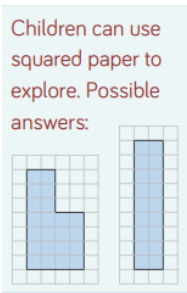
64 and 1

32 and 2

16 and 4

Accept dimensions where the width is longer than the length.

7)

Children can use squared paper to explore. Possible answers:

8)

Indicates No and gives a correct explanation that includes indicating two different areas, eg:

- A rectangle with sides 6 cm by 2 cm has a perimeter of 16 cm and an area of 12 cm² but a rectangle with sides 5 cm and 3 cm has the same perimeter of 16 cm but it has an area of 15 cm² which is different so she is not correct

- A square with sides 3 cm by 3 cm and a rectangle with sides 4 cm by 2 cm have the same perimeter of 12 cm but they have different areas of 9 cm² and 8 cm²

Accept minimally acceptable explanation, eg:
- *6 × 2 = 12, 5 × 3 = 15*
-

! Ignore any incorrect units given in an otherwise correct explanation, eg:
- *6² for 6 cm²*

! Indicates Yes, or no decision made, but explanation clearly correct
Condone, provided the explanation is more than minimal

***Do not accept** Incomplete or incorrect explanation, eg:*
- *6 × 2, 5 × 3*
- *Two rectangles, one with sides 6 cm by 5 cm and one with sides 8 cm by 3 cm have the same perimeter of 22 cm but they don't have the same area*
-

9)

Award **TWO** marks for the correct answer of 144

If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g.

- 8 × 6 = 48
  48 ÷ 4 = 13 (error)
  13 × 13 = 169

OR

Award **ONE** mark for:

- evidence for the side length of the square calculated correctly, i.e. 12
  *Answer need not be obtained for the award of **ONE** mark.*

Up to 2m

[2]

10)

Award **TWO** marks for the correct answer of 54

If the answer is incorrect, award **ONE** mark for evidence of appropriate working, eg

8 × 4 = 32

3 × 4 = 12

5 × 2 = 10

32 + 12 + 10 = wrong answer

*Working must be carried through to reach an answer for the award of **ONE** mark.*

ARE challenge answers

1)

The area of the shaded triangle is 24 cm²

Mo is incorrect as he has just multiplied the two numbers given and divided by 2, he hasn't identified the correct base of the triangle.

2)

15

or

6(cm) and 1.5(cm) seen (*the dimensions of the rectangle*)

OR

Shows or implies a complete correct method, eg:

- $\sqrt{36}$ = 8 (*error*)
  8 ÷ 4 = 2
  2 × (8 + 2)

- 6 × 6 = 36
  6 ÷ 4 = 1.2 (*error*)
  6 + 1.2 + 6 + 1.2

  Do not accept confusion between area and perimeter, ie:
  - side of square is 36 ÷ 4 = 9 (*error*)
    2 × (9 + 2.25)

3)

Award **TWO** marks for the correct answer of 72

If the answer is incorrect, award **ONE** mark for evidence of appropriate working, eg:

- 13 × 4 = 52

  5 × 4 = 20

  52 + 20 = wrong answer

  Working must be carried through to reach an answer for the award of ONE mark.

Up to 2