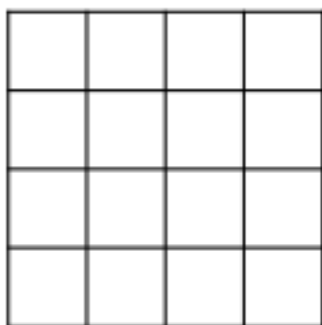


## Area of Compound Shapes

1a. Each square has an area of  $4\text{cm}^2$ .



Draw 3 different compound shapes that have an area of  $16\text{cm}^2$ .

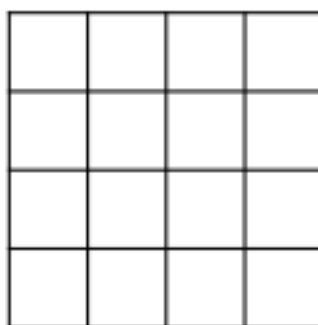


*Not to scale*

PS

## Area of Compound Shapes

1b. Each square has an area of  $1\text{cm}^2$ .



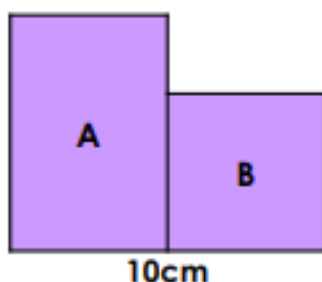
Draw 3 different compound shapes that have an area of  $12\text{cm}^2$ .



*Not to scale*

PS

2a. Add the missing lengths to make the following statement correct.



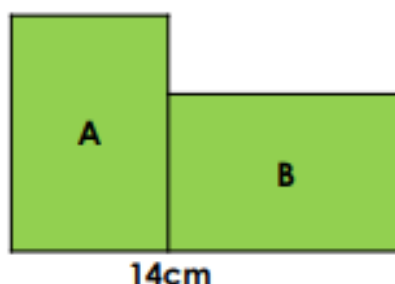
A has an area of  $45\text{cm}^2$  and B has an area of  $25\text{cm}^2$ .



*Not to scale*

PS

2b. Add the missing lengths to make the following statement correct.



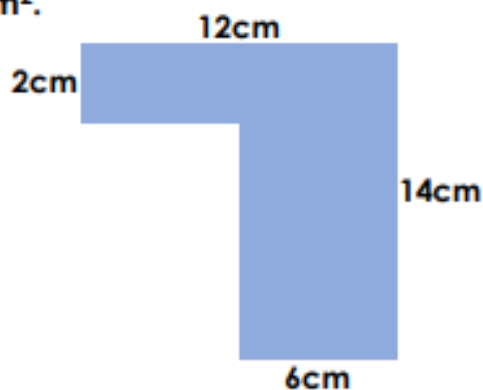
A has an area of  $48\text{cm}^2$  and B has an area of  $48\text{cm}^2$ .



*Not to scale*

PS

3a. Muna thinks the area of the shape is  $108\text{cm}^2$ .



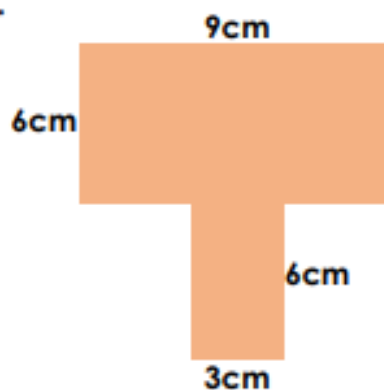
Is she correct? Convince me.



*Not to scale*

R

3b. Ryan thinks the area of the shape is  $24\text{cm}^2$ .



Is he correct? Convince me.

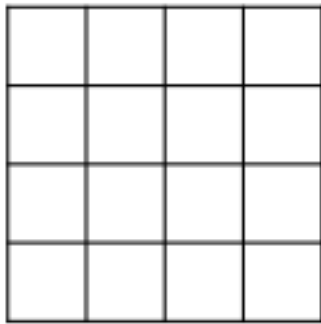


*Not to scale*

R

## Area of Compound Shapes

4a. Each square has an area of  $4\text{mm}^2$ .



Draw 3 different compound shapes that have an area of  $36\text{mm}^2$ .

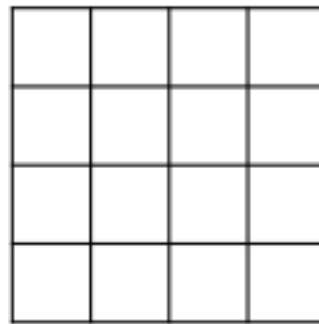


*Not to scale*

PS

## Area of Compound Shapes

4b. Each square has an area of  $9\text{m}^2$ .



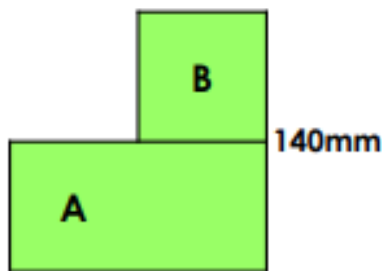
Draw 3 different compound shapes that have an area of  $72\text{m}^2$ .



*Not to scale*

PS

5a. Add the missing lengths to make the following statement correct.



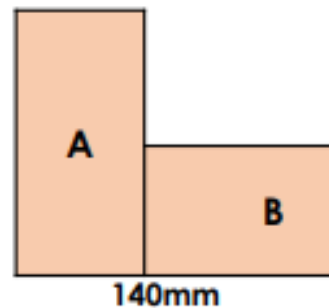
A has an area of  $84\text{cm}^2$  and B has an area of  $49\text{cm}^2$ .



*Not to scale*

PS

5b. Add the missing lengths to make the following statement correct.



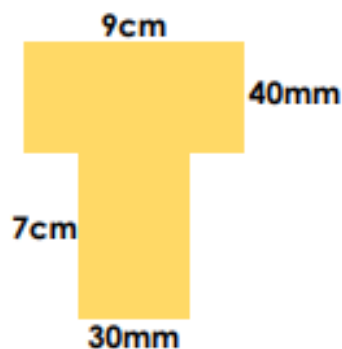
A has an area of  $60\text{cm}^2$  and B has an area of  $48\text{cm}^2$ .



*Not to scale*

PS

6a. Oscar thinks the area of the shape is  $57\text{mm}^2$ .



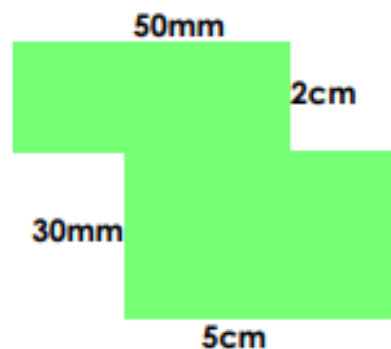
Is he correct? Convince me.



*Not to scale*

R

6b. Josie thinks the area of the shape is  $25\text{cm}^2$ .



Is she correct? Convince me.

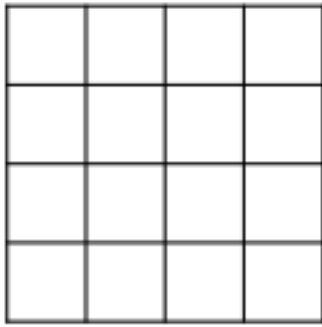


*Not to scale*

R

## Area of Compound Shapes

7a. Each square has an area of  $1.5\text{m}^2$ .



Draw 3 different compound shapes that have an area of  $12\text{m}^2$ .

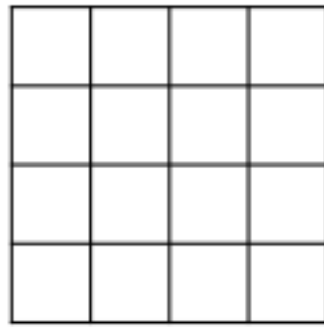


Not to scale

PS

## Area of Compound Shapes

7b. Each square has an area of  $2.2\text{cm}^2$ .



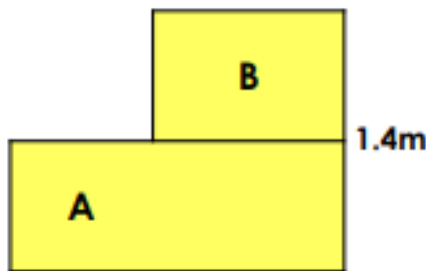
Draw 3 different compound shapes that have an area of  $22\text{cm}^2$ .



Not to scale

PS

8a. Add the missing lengths to make the following statement correct.



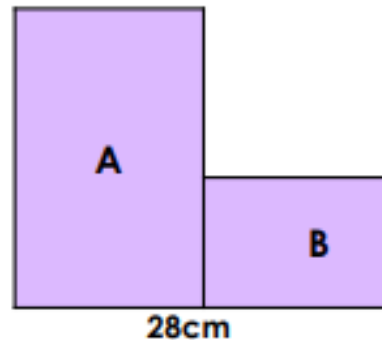
A has an area that is twice as large as B.



Not to scale

PS

8b. Add the missing lengths to make the following statement correct.



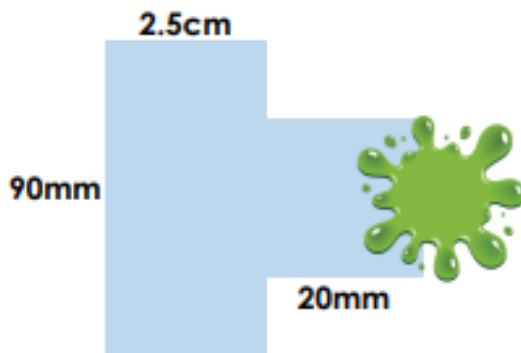
A has an area that is twice as large as B.



Not to scale

PS

9a. Flora thinks the area of the shape must be smaller than  $30\text{cm}^2$ .



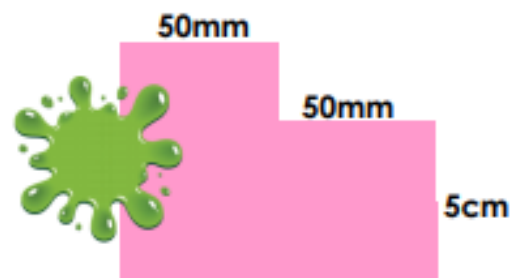
Is she correct? Convince me.



Not to scale

R

9b. Saul thinks the area of the shape must be greater than  $35\text{cm}^2$ .



Is he correct? Convince me.



Not to scale

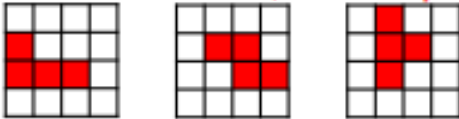
R

## ANSWERS

### Reasoning and Problem Solving Area of Compound Shapes

#### Developing

1a. Various answers, for example:



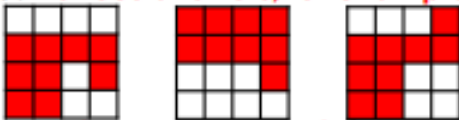
Accept any compound shapes with an area of  $16\text{cm}^2$ . Each shape should have 4 squares shaded.

2a. A.  $9 \times 5 = 45\text{cm}^2$ ; B.  $5 \times 5 = 25\text{cm}^2$

3a. Muna is incorrect.  $12\text{cm} \times 2\text{cm} = 24\text{cm}^2$ ;  $12\text{cm} \times 6\text{cm} = 72\text{cm}^2$ ;  $72\text{cm}^2 + 24\text{cm}^2 = 96\text{cm}^2$

#### Expected

4a. Various answers, for example:



Accept any compound shapes with an area of  $36\text{mm}^2$ . Each shape should have 9 squares shaded.

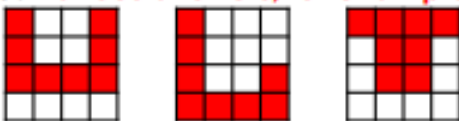
5a. Various answers, for example:

A.  $7 \times 12 = 84\text{cm}^2$ ; B.  $7 \times 7 = 49\text{cm}^2$

6a. Oscar is incorrect.  $9\text{cm} \times 40\text{mm} = 36\text{cm}^2$ ;  $7\text{cm} \times 30\text{mm} = 21\text{cm}^2$ ;  $36\text{cm}^2 + 21\text{cm}^2 = 57\text{cm}^2$ . Josie has not converted from mm to cm.

#### Greater Depth

7a. Various answers, for example:



Accept any compound shape with an area of  $12\text{m}^2$ . Each shape should have 8 squares shaded.

8a. Various answers, for example:

A =  $16 \times 0.7 = 11.2\text{m}^2$ ; B =  $8 \times 0.7 = 5.6\text{m}^2$ .

9a. Flora might not be correct. We know that  $9 \times 2.5 = 22.5\text{cm}^2$  and we know one of the other sides is 2cm. The missing number would have to be smaller than 3.75cm to have an area smaller than  $30\text{cm}^2$ .

However, the missing length could be greater than 3.75cm.

### Reasoning and Problem Solving Area of Compound Shapes

#### Developing

1b. Various answers, for example:



Accept any compound shapes with an area of  $12\text{cm}^2$ . Each shape should have 12 squares shaded.

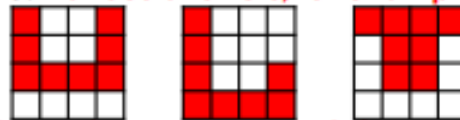
2b. Various answers, for example:

A.  $8 \times 6 = 48\text{cm}^2$ ; B =  $6 \times 8 = 48\text{cm}^2$

3b. Ryan is incorrect.  $9\text{cm} \times 6\text{cm} = 54\text{cm}^2$ ;  $6\text{cm} \times 3\text{cm} = 18\text{cm}^2$ ;  $54\text{cm}^2 + 18\text{cm}^2 = 72\text{cm}^2$

#### Expected

4b. Various answers, for example:



Accept any compound shapes with an area of  $72\text{m}^2$ . Each shape should have 8 squares shaded.

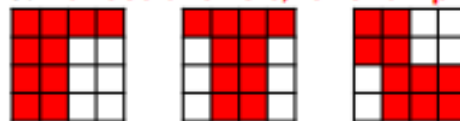
5b. Various answers, for example:

A.  $6 \times 10 = 60\text{cm}^2$ ; B.  $8 \times 6 = 48\text{cm}^2$

6b. Josie is correct.  $2\text{cm} \times 5\text{cm} = 10\text{cm}^2$ ;  $3\text{cm} \times 5\text{cm} = 15\text{cm}^2$ ;  $10\text{cm}^2 + 15\text{cm}^2 = 25\text{cm}^2$

#### Greater Depth

7b. Various answers, for example:



Accept any compound shape with an area of  $22\text{cm}^2$ . Each shape should have 10 squares shaded.

8b. Various answers, for example:

A =  $14 \times 4 = 56\text{cm}^2$ ; B =  $14 \times 2 = 28\text{cm}^2$ .

9b. It is possible for Saul to be correct. We know part of the shape's area as  $5 \times 5 = 25\text{cm}^2$ . We know that on the unlabelled rectangle, one side is 5cm. The missing side also appears to be longer than 5cm, so to multiply 5 by anything greater than 5 will give a total area greater than  $35\text{cm}^2$ .