Shapes – Same Area

7a. Reilly says,



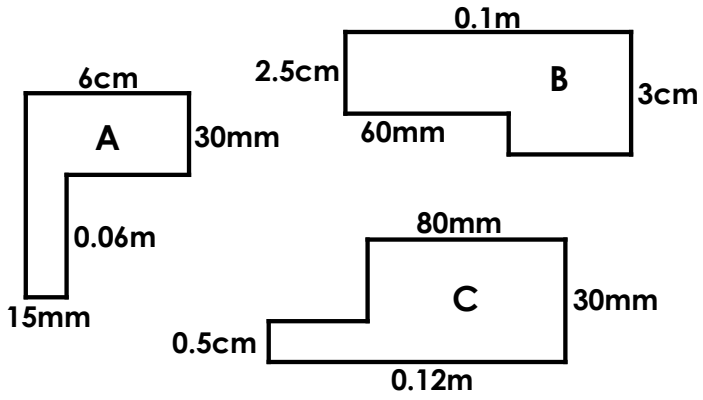
I can draw a six-sided and an eight-sided rectilinear shape with an area of 26.5cm².

Draw two shapes to prove that Reilly is correct. Your shapes must include some half or quarter squares.

GD

PS

8a. True or false? All of these shapes have the same area.



not to scale

Explain your answer.

GD

R

9a. Nate is experimenting with the area of rectilinear shapes.

He says,

"If a shape has an area of 36cm², the length of it could be 65mm."

Is he correct? Explain why.

GD

R

Shapes – Same Area

7b. Maggie says,



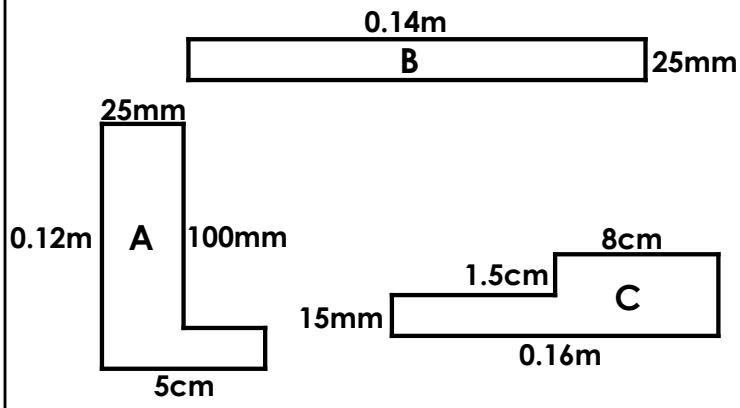
I can draw a six-sided and an eight-sided rectilinear shape with an area of 30.25cm².

Draw two shapes to prove that Maggie is correct. Your shapes must include some half or quarter squares.

GD

PS

8b. True or false? All of these shapes have the same area.



not to scale

Explain your answer.

GD

R

9b. Isabelle is experimenting with the area of rectilinear shapes.

She says,

"If a shape has a length of 25cm, the area could be 7cm²."

Is she correct? Explain why.

GD

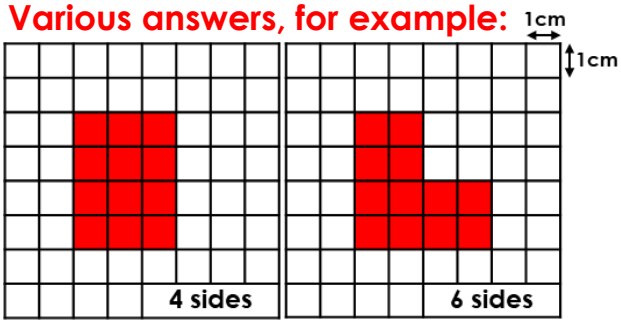
R

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Reasoning and Problem Solving
Shapes – Same Area

Developing

1a. Various answers, for example:

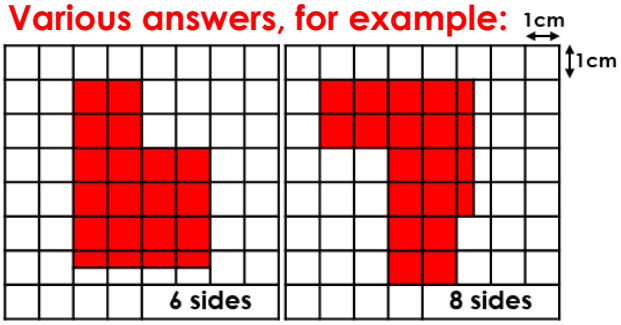


2a. False. Shape A and B have an area of 18cm², but shape C has an area of 19cm².

3a. Yes, he is correct. A shape with a length of 6cm and a width of 4cm will have an area of 24cm².

Expected

4a. Various answers, for example:

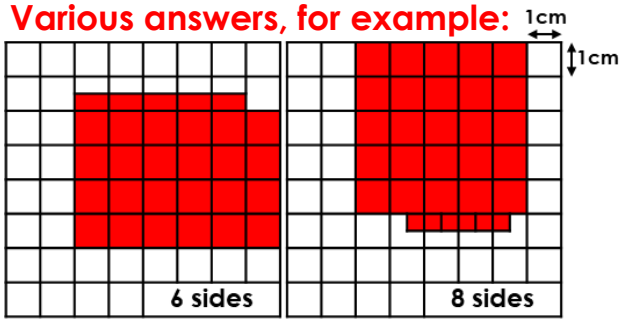


5a. False. Shape A and C have an area of 12cm², but shape B has an area of 18cm².

6a. Yes, she is correct. A shape with a length of 38cm and a width of 0.5cm would have an area of 19cm².

Greater Depth

7a. Various answers, for example:



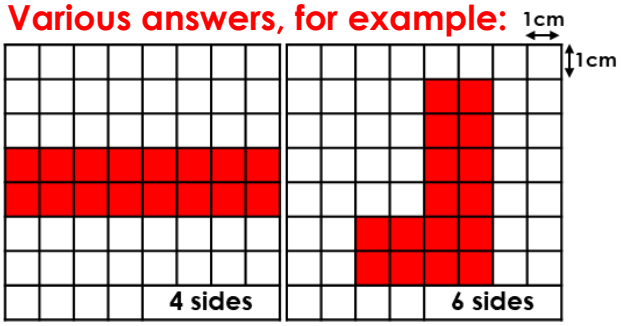
8a. False. Shape A and B have an area of 27cm², but shape C has an area of 26cm².

9a. Yes, he is correct. A compound shape containing a rectangle 65mm by 40mm and a second rectangle, 5cm by 2cm, will have an area of 36cm².

Reasoning and Problem Solving
Shapes – Same Area

Developing

1b. Various answers, for example:

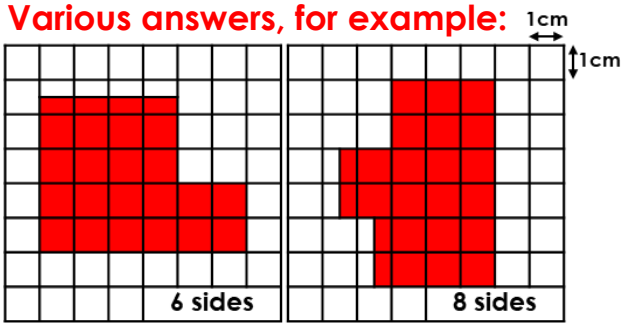


2b. False. Shape A and B have an area of 14cm² , but Shape C has an area of 15cm².

3b. No, she is incorrect. There are no integers that can be multiplied by 8 to produce 27.

Expected

4b. Various answers, for example:

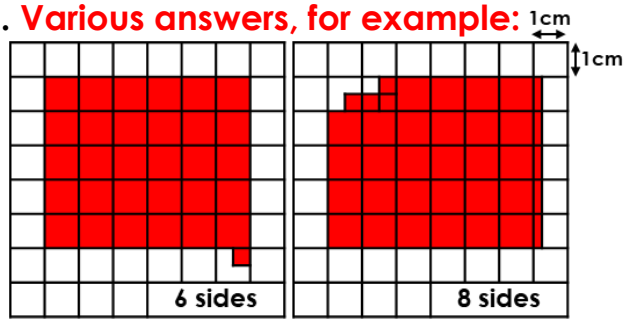


5b. True. All the shapes have an area of 24cm².

6b. Yes, he is correct. A rectilinear shape with a length of 8.5cm and width of 3cm, for one part and 1.5cm by 5cm for the second part, would have an area of 33cm².

Greater Depth

7b. Various answers, for example:



8b. False. Shape A and B have an area of 35cm², but shape C has an area of 36cm².

9b. Yes, she is correct. A compound shape consisting of two rectangles, one 25cm by 0.25 (6.25cm²) and 1.25 by 3cm (3.75cm²) gives an area of 10cm².

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