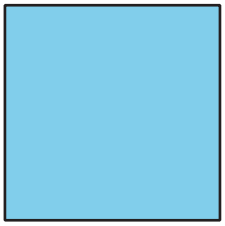
Reasoning to Find Area

Let's decompose and rearrange shapes to find their areas.

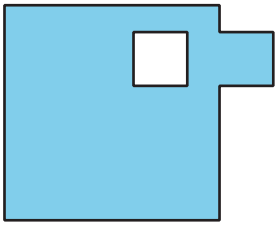
3.1 Comparing Regions

Is the area of Figure A greater than, less than, or equal to the area of the shaded region in Figure B? Be prepared to explain your reasoning.

A



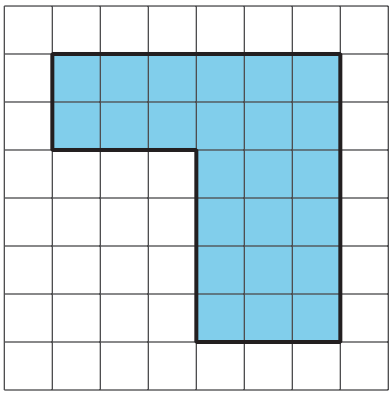
B



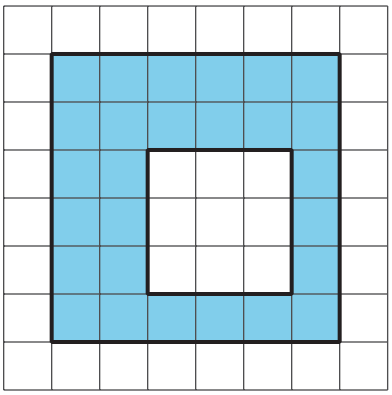
3.2 On the Grid

Each grid square is 1 square unit. Find the area, in square units, of each shaded region without counting every square. Be prepared to explain your reasoning.

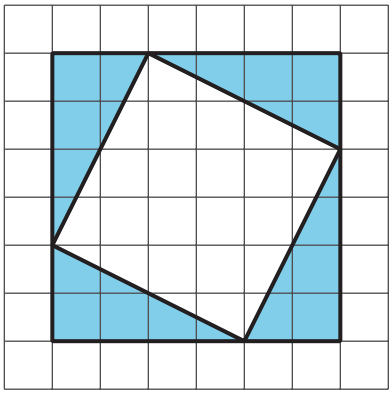
A



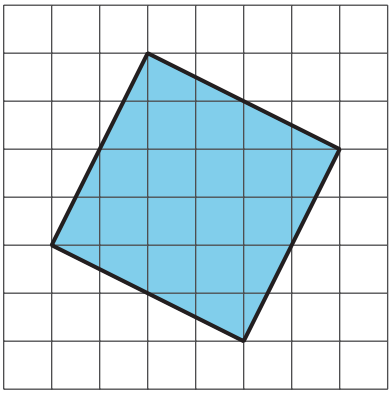
B



C

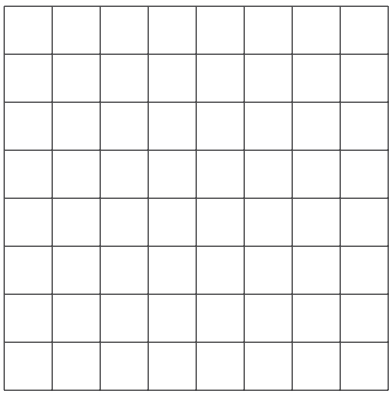


D



Are you ready for more?

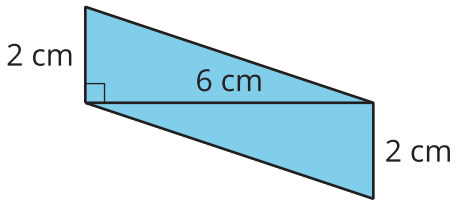
Rearrange the shaded triangles from Figure C so they fit inside Figure D. Draw and color a diagram of your work.



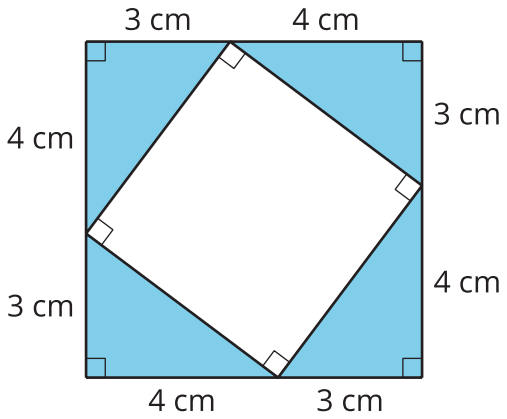
3.3 Off the Grid

Find the area of the shaded region(s) of each figure. Explain or show your reasoning.

E



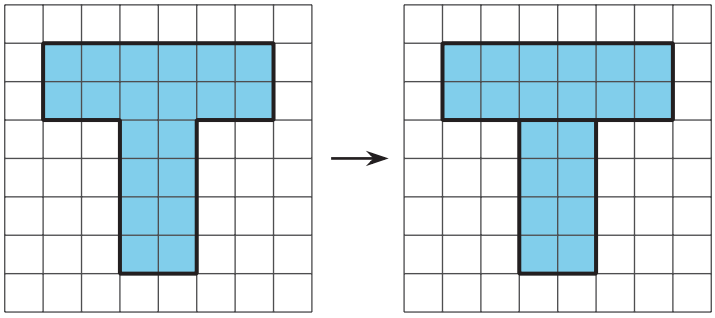
F



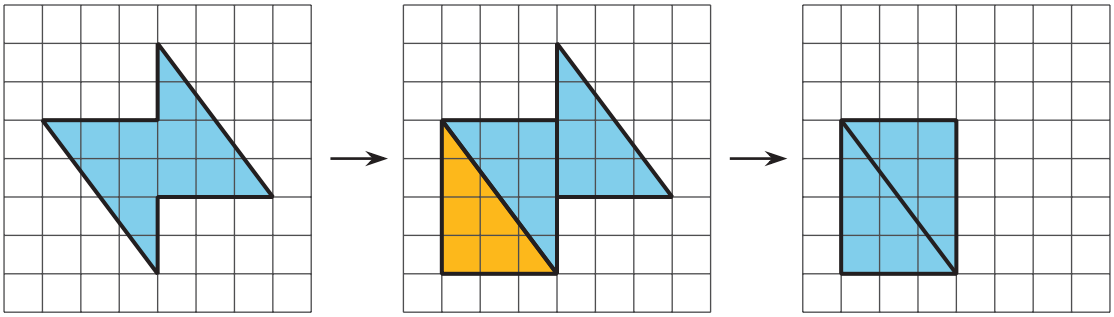
Lesson 3 Summary

There are different strategies we can use to find the area of a region. We can:

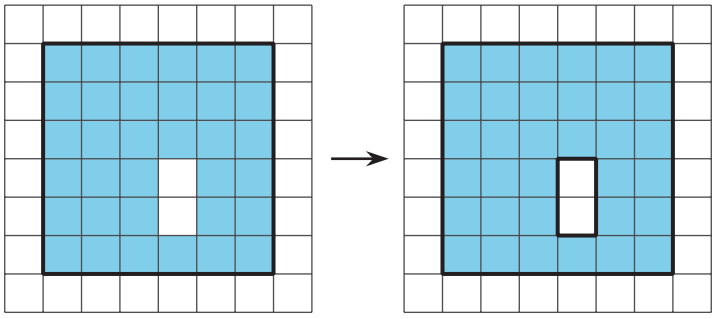
- Decompose it into shapes whose areas we know how to calculate. We find the area of each of those shapes, and then add the areas.



- Decompose it and rearrange the pieces into shapes whose areas we know how to calculate. We find the area of each of those shapes, and then add the areas.

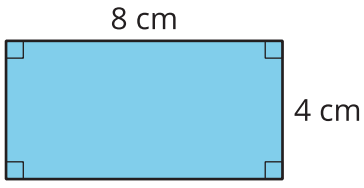


- Consider it as a shape with a missing piece. We calculate the area of the shape and the missing piece, and then subtract the area of the piece from the area of the shape.



The area of a figure is always measured in square units.

When both side lengths of a rectangle are given in centimeters, then the area is given in square centimeters. For example, the area of this rectangle is 32 square centimeters.



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