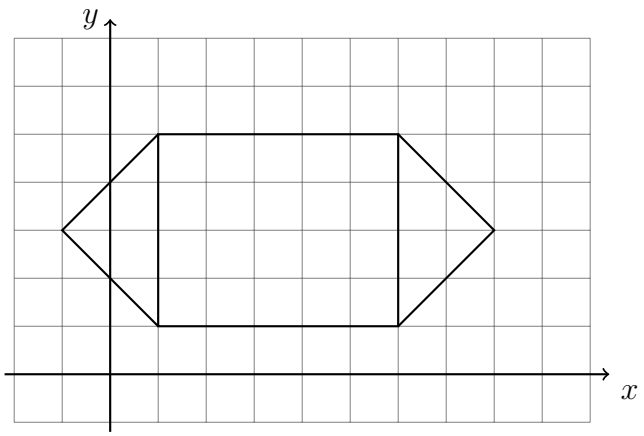
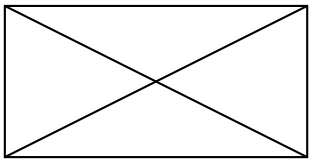
8.11 Do Now: Compound areas

1. Find the area of the shape shown below composed of a rectangle and two triangles.



2. The figure shows a rectangle 3 cm wide and 2 cm high.



   (a) What is the area of the rectangle?

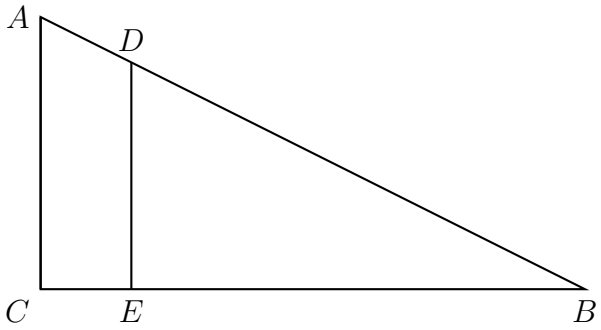
   (b) What is the perimeter of the rectangle?

   (c) The rectangle is divided by its diagonals into four triangles. Which triangles are larger, or are they all the same size? Justify your response.

3. In right triangle ABC shown below, point D is on $\overline{AB}$ and point E is on $\overline{BC}$ such that $\overline{AC} \parallel \overline{DE}$. Given $BD = 12$, $BC = 12$, and $EC = 2$.

   (a) Find the length of $\overline{BE}$.

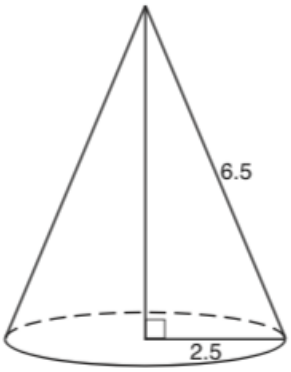
   (b) Find the scale factor, k, dilating $\triangle DBE \to \triangle ABC$, centered at B.



   (c) Find AD.

4. As shown in the diagram, the radius of a cone is 2.5 cm and its slant height is 6.5 cm.

   (a) Find the height of the cone.



   (b) How many cubic centimeters are in the volume of the cone? Express your answer in terms of π.