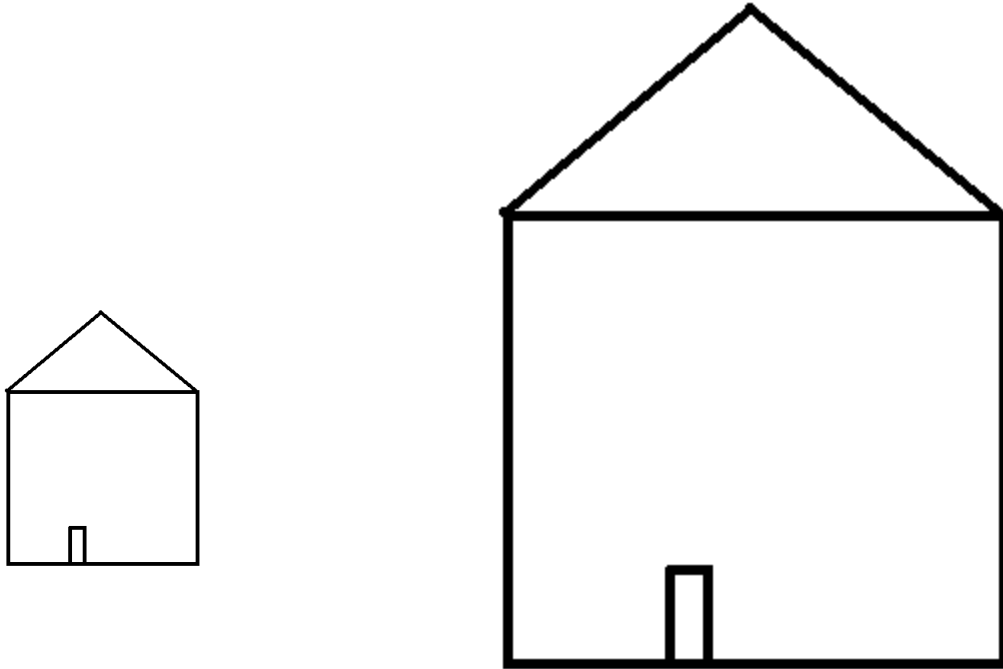


Student Dilation Homework:

1. Use a ruler and determine the dilation factor for the following enlargement:

About 2.63



2. Using a rule, re-draw the arrow below after it is dilated by a factor of 1.6.

Answer:



3. A rectangle that is 25 cm long and 8 cm wide is dilated by a factor of 0.2. Find:

The original area:  $200 \text{ cm}^2$

The new length:  $5 \text{ cm}$

The original perimeter:  $66 \text{ cm}$

The new width:  $1.6 \text{ cm}$

The new area:  $8 \text{ cm}^2$

The new perimeter:  $13.2 \text{ cm}$

4. A circle with a radius of 12.0 meters is dilated by a factor of 3.5. Find:  
 The original area:  $\approx 452.4 \text{ m}^2$       The new radius: 42 m  
 The original circumference:  $\approx 75.4 \text{ m}$       The new area:  $\approx 5542 \text{ m}^2$   
 The new circumference:  $\approx 264 \text{ m}$

5. If the circle in problem #4 were only dilated in the horizontal direction by 0.3 (not a “true” mathematical dilation), draw a rough sketch of the type of shape that it would obtain.

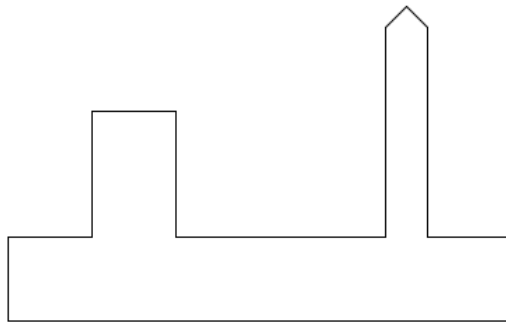
Student picture should look like an ellipse with the major axis running horizontally.

6. The figure below is 12 units wide and 7.5 units high. Give the dimensions of the largest dilated figure that would fit in a frame that was 34 units wide and 23 units high. Show your work and explain your reasoning.

$34/12 \approx 2.83 \leftarrow$  Use this

$23/7.5 \approx 3.06$

The figure would be 34 units wide and about 21.2 units high.



7. If the original area of the figure in problem six was 40 square units, what would be the area of the dilated figure?

$40 (2.83)^2 \approx 320$  square units