

Pre-Algebra

Unit 10: Similar Figures

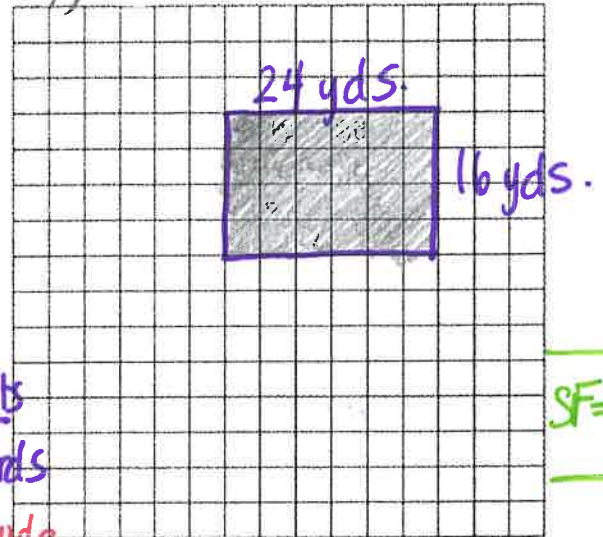
Lesson 10.4: Scale Drawings

Name: Key

Hour: _____

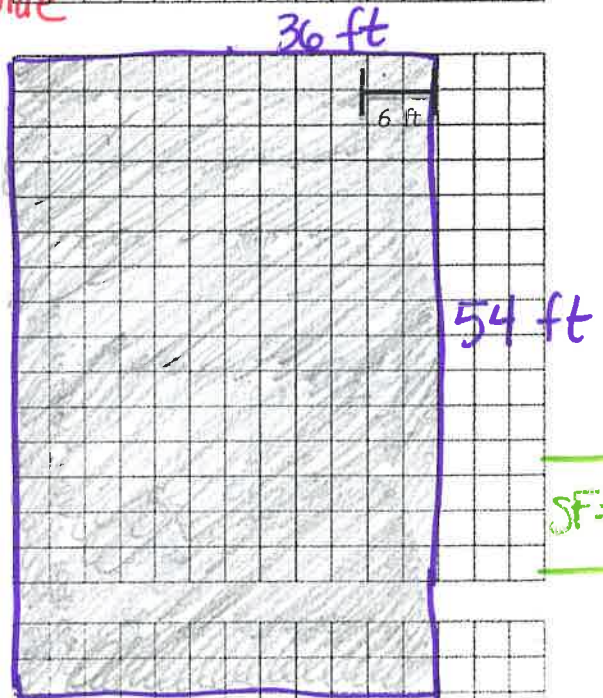
$$\left(\begin{aligned} 24+16+24+16 \times \boxed{SF} &= 4+6+4+6 \\ 80 \times \frac{1}{4} &= 20 \end{aligned} \right)$$

1. Claudia is redesigning the rectangular kids play area at Briarwood Mall. The space set aside for the play area is 24 yards by 16 yards. Draw the play area on the grid such that 1 unit represents 4 yards.



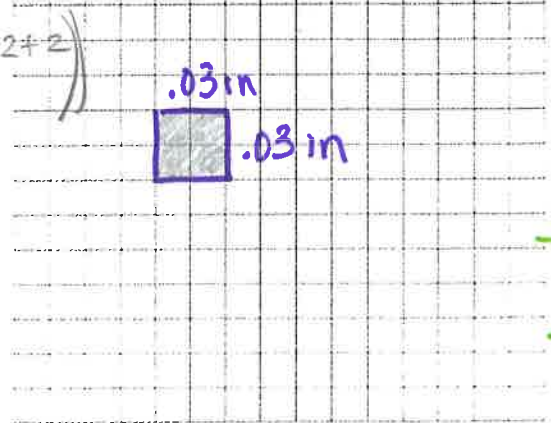
$$SF = \frac{1}{4}$$

2. Grayson is an archeologist. He is currently excavating a rectangular region that is 36 ft by 54 ft. He has to create a scale drawing of the region for a local travel brochure. Draw Grayson's site on the grid.



$$SF = \frac{1}{3}$$

3. Each side of a square is 0.03 inches. Draw a square such that 1 unit on the grid represent 0.015 inches.



$$SF = 2$$

$$\left(\begin{aligned} 36+54+36+54 \times \boxed{SF} &= 12+18+12+18 \\ 180 \times \frac{1}{3} &= 60 \end{aligned} \right)$$

$$\frac{1 \text{ unit}}{4 \text{ yards}} = \frac{x \text{ units}}{24 \text{ yards}} \quad \left| \quad \frac{1 \text{ unit}}{4 \text{ yards}} = \frac{x \text{ units}}{16 \text{ yards}} \right.$$

$x = 6$ units long $x = 4$ units wide

$$\frac{1 \text{ unit}}{3 \text{ ft}} = \frac{x \text{ units}}{36 \text{ ft}} \quad \left| \quad \frac{1 \text{ unit}}{3 \text{ ft}} = \frac{x \text{ units}}{54 \text{ ft}} \right.$$

$x = 12$ units long $x = 18$ units wide

$$\left(\begin{aligned} .03+.03+.03+.03 \times \boxed{SF} &= 2+2+2+2 \\ .12 \times \frac{1}{.015} &= 8 \end{aligned} \right)$$

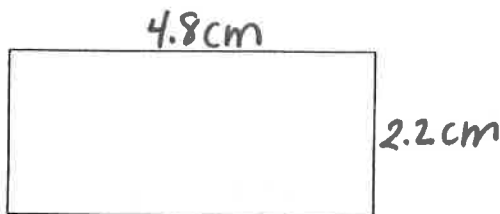
$$\frac{1 \text{ unit}}{.015 \text{ inches}} = \frac{x \text{ units}}{.03 \text{ inches}}$$

$x = 2$ units long

Create multiple scale drawings of each figure using the specified scale factors. Follow the steps listed below.

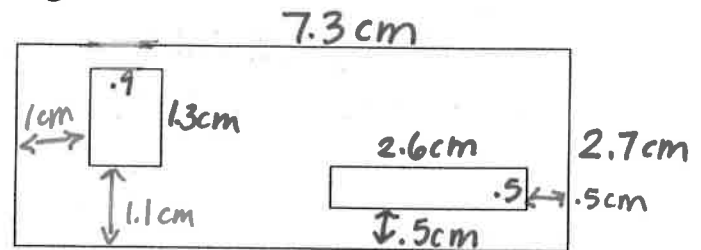
- Measure the dimensions of the shape to the nearest tenth of a centimeter.
- Multiply each dimension by the given scale factor.
- Draw a shape using the new dimensions (answer when multiplied by the scale factor) on your drawing paper. Remember your new drawing should be the same shape as the original shape, just larger or smaller.
- Label the drawing with the appropriate scale. (ex. 1:2 or 1:5, etc.)
- Repeat for each given scale factor.

Figure 1



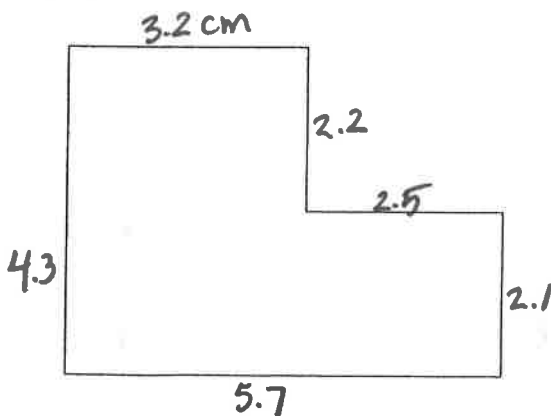
- Scale Factor: 2 *double the dimensions*
- Scale Factor: 4
- Scale Factor: 5

Figure 2



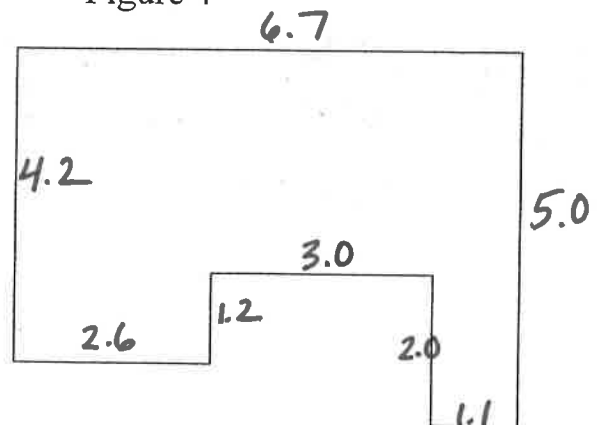
- Scale Factor: 1/2
- Scale Factor: 2
- Scale Factor: 4

Figure 3



- Scale Factor: 2
- Scale Factor: 3
- Scale Factor: 4

Figure 4



- Scale Factor: 1/2 *cut the dimensions in 1/2*
- Scale Factor: 3
- Scale Factor: 5