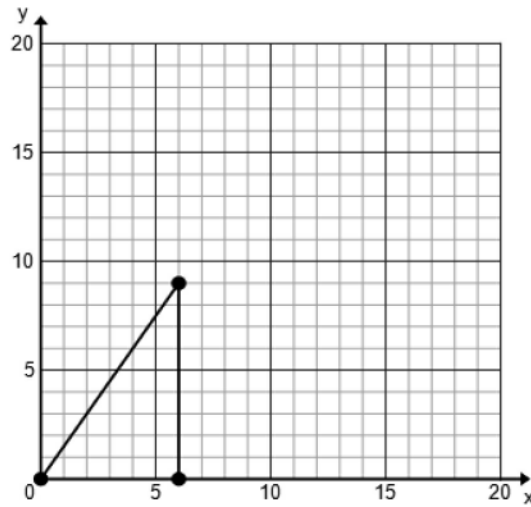


Name _____

Date _____

Relating Scale Drawings to Ratios and Rates

Use the following figure on the graph for Problems 1 and 2.



1. a. If the original lengths are multiplied by 2, what are the new coordinates?

b. Use the table to organize lengths (the vertical and horizontal legs).

	WIDTH	HEIGHT
Actual Picture (in units)		
New Picture (in units)		

c. Is the new picture a reduction or an enlargement?

d. What is the constant of proportionality?

2. a. If the original lengths are multiplied by $\frac{1}{3}$, what are the new coordinates?

b. Use the table to organize lengths (the vertical and horizontal legs).

	WIDTH	HEIGHT
Actual Picture (in units)		
New Picture (in units)		

c. Is the new picture a reduction or an enlargement?

d. What is the constant of proportionality?

For Problems 1–3, identify if the scale drawing is a reduction or an enlargement of the actual picture.

1. _____

a. Actual Picture

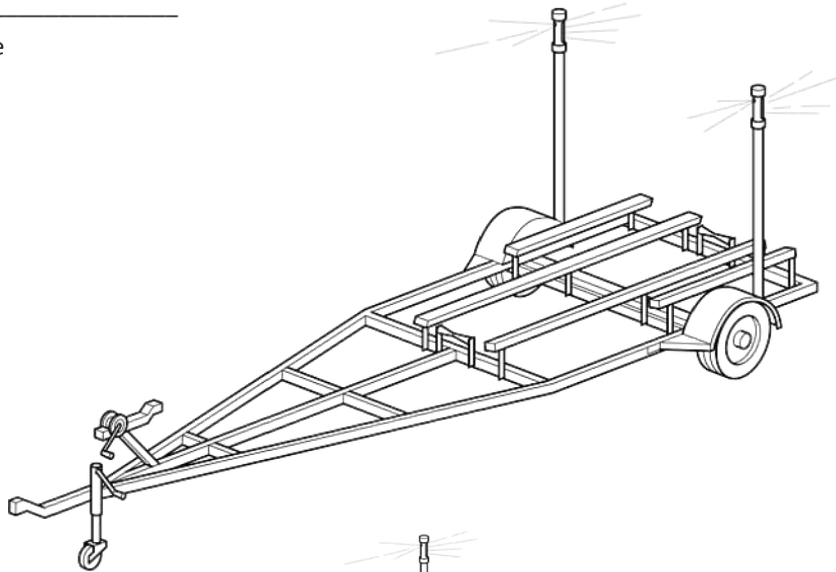


b. Scale Drawing

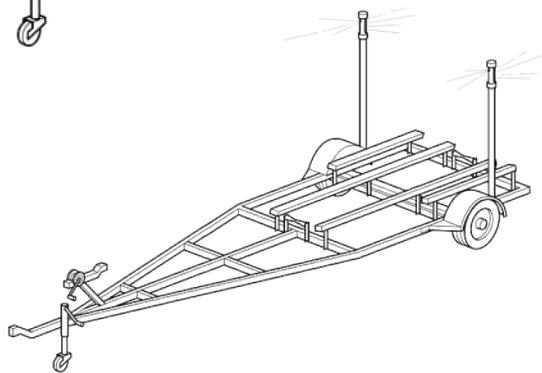


2. _____

a. Actual Picture



b. Scale Drawing



3. _____

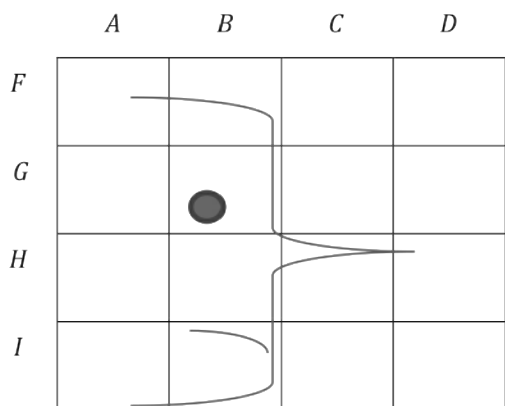
a. Actual Picture



b. Scale Drawing



4. Using the grid and the abstract picture of a face, answer the following questions:



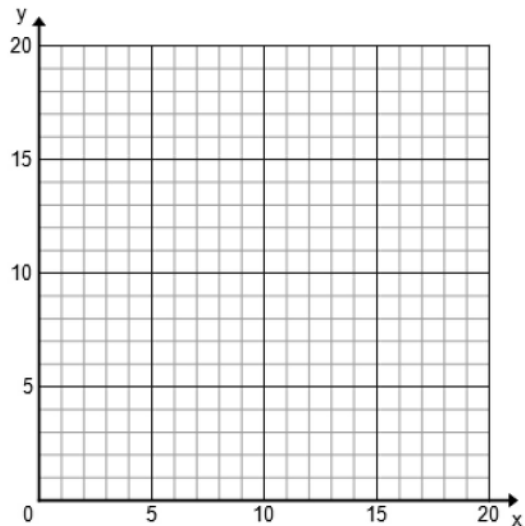
- a. On the grid, where is the eye?
- b. What is located in DH ?
- c. In what part of the square BI is the chin located?

5. Use the blank graph provided to plot the points and decide if the rectangular cakes are scale drawings of each other.

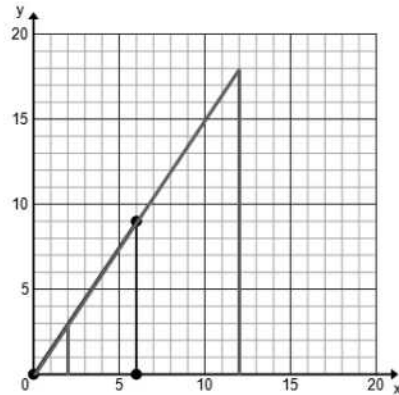
Cake 1: $(5,3), (5,5), (11,3), (11,5)$

Cake 2: $(1,6), (1,12), (13,12), (13,6)$

How do you know?



Use the following figure on the graph for Problems 1 and 2.



1. a. If the original lengths are multiplied by 2, what are the new coordinates?
 (0, 0), (12, 18), (12, 0)

- b. Use the table to organize lengths (the vertical and horizontal legs).

	WIDTH	HEIGHT
Actual Picture (in units)	6 units	9 units
New Picture (in units)	12 units	18 units

- c. Is the new drawing a reduction or an enlargement?

Enlargement

- d. What is the constant of proportionality?

2

2. a. If the original lengths are multiplied by $\frac{1}{3}$ what are the new coordinates?
 (0, 0), (2, 3), (2, 0)

- b. Use the table to organize lengths (the vertical and horizontal legs).

	WIDTH	HEIGHT
Actual Picture (in units)	6 units	9 units
New Picture (in units)	2 units	3 units

- c. Is the new drawing a reduction or an enlargement?

Reduction

- d. What is the constant of proportionality?

$\frac{1}{3}$

For Problems 1–3, identify if the scale drawing is a reduction or an enlargement of the actual picture.

1. Enlargement

a. Actual Picture

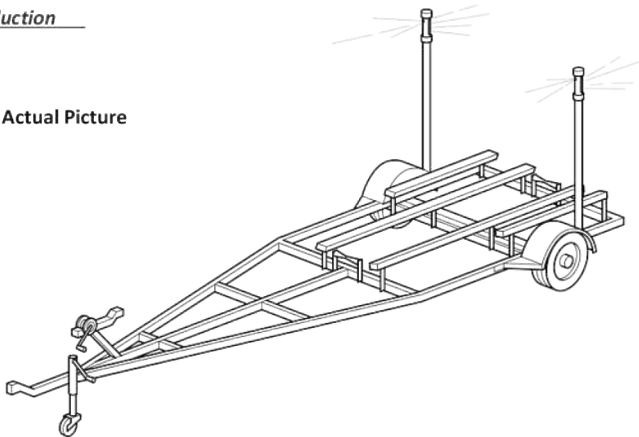


b. Scale Drawing

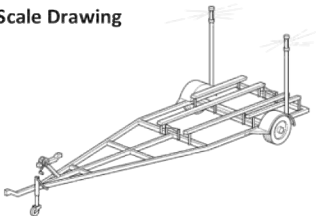


2. Reduction

a. Actual Picture



b. Scale Drawing



3. Enlargement

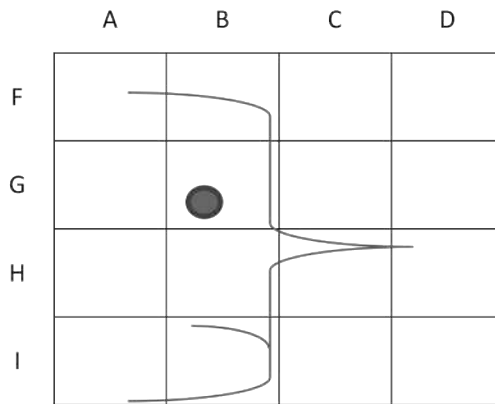
a. Actual Picture



b. Scale Drawing



4. Using the grid and the abstract picture of a face, answer the following questions:



a. On the grid, where is the eye?

Intersection BG

b. What is located in *DH*?

Tip of the nose

c. In what part of the square *BI* is the chin located?

Bottom right corner

5. Use the blank graph provided to plot the points and decide if the rectangular cakes are scale drawings of each other.

Cake 1: (5, 3), (5, 5), (11, 3), (11, 5)

Cake 2: (1, 6), (1, 12), (13, 12), (13, 6)

How do you know?

These images are not scale drawings of each other because the short length of Cake 2 is three times longer than Cake 1, but the longer length of Cake 2 is only twice as long as Cake 1. Both should either be twice as long or three times as long to have one-to-one correspondence and to be scale drawings of each other.

