Agenda:

1) Bell Ringer; p. 74

2) Look over Quizzes

3) Lesson 16: What are scale drawings?

4) Homework: Lesson 16 (#1-4)
PS # 5 due on Tuesday

Sep 7-12:49 PM

Lesson 16: Relating Scale Drawings to Ratios and Rates

Oct 7-8:52 AM

Classwork

Intro Activity: Can You Guess the Image?

1.

- subway map
- reduction

Oct 7-10:40 AM

fingerprint Enlargement

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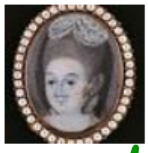
Example 1

For the following problems, (a) is the actual picture and (b) is the scale drawing. Is the scale drawing an enlargement or a reduction of the actual picture?

actual - original (x)

1. a. 

actual (x)

b.

Enlargement (y)

2. a.

b.

Reduction (y)

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Key Idea:

Scale Drawing: a reduced or enlarged two-dimensional drawing of an original two-dimensional drawing.

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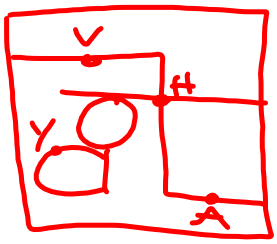
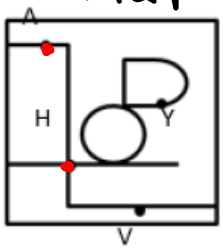
Example 2

Derek's family took a day trip to a modern public garden. Derek looked at his map of the park that was a reduction of the map located at the garden entrance. The dots represent the placement of rare plants. The diagram below is the top-view as Derek held his map while looking at the posted map.

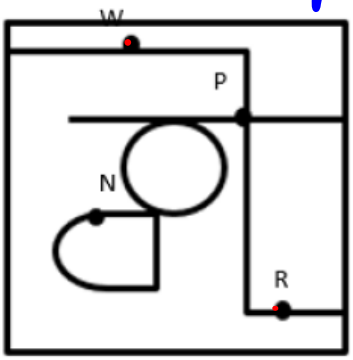
Redraw



Derek's map



Garden map



same place

What are the corresponding points of the scale drawings of the maps?

Point A to R Point V to W Point H to P Point Y to N

Exercise 1

Create scale drawings of your own modern nesting robots using the grids provided.

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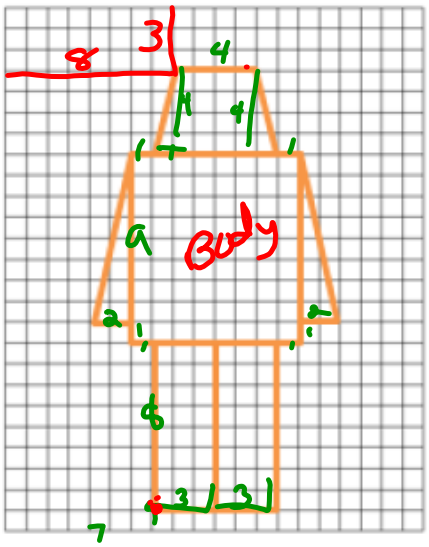

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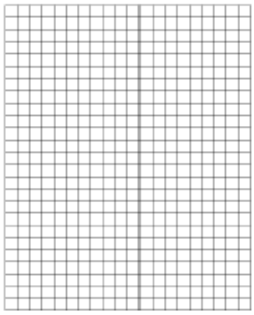

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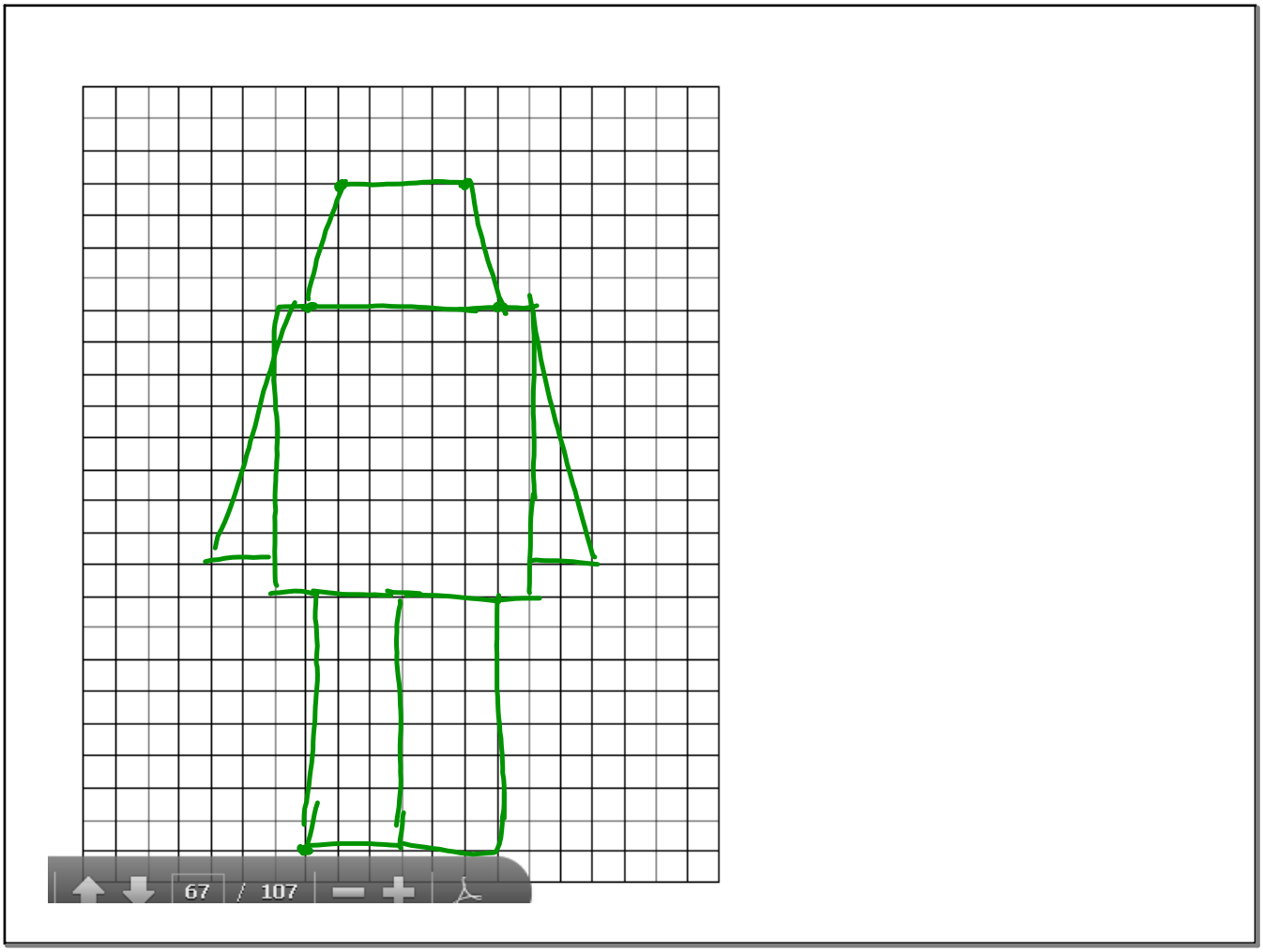

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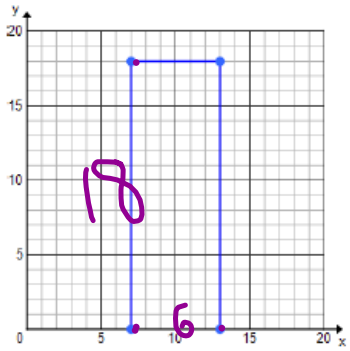
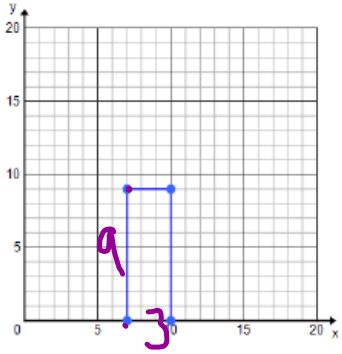
Example 3

Celeste drew an outline of a building for a diagram she was making and then drew a second one mimicking her original drawing. State the coordinates of the vertices and fill in the table.





	Height	Length
Original Drawing	18	6
Second Drawing	9	3

x	y
18	9
6	3

Unit Rate

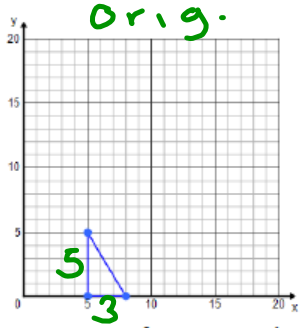
$\frac{9}{18} = \frac{1}{2}$

$\frac{3}{6} = \frac{1}{2}$

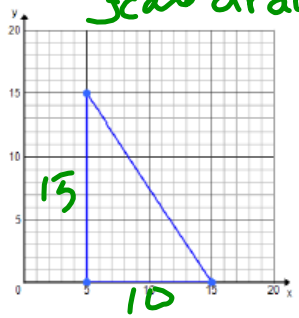
Exercise 2

Luca drew and cut out small right triangle for a mosaic piece he was creating for art class. His mother really took a liking and asked if he could create a larger one for their living room and Luca made a second template for his triangle pieces.

orig.



scale drawing



Lengths of the original image	3	5
	×3	×3
Lengths of the second image	9 ~~10~~	15

a. Does a constant of proportionality exist? If so, what is it? If not, explain.

$10 \div 3 = 3.3$

$15 \div 5 = 3$

no

b. Is Luca's enlarged mosaic a scale drawing of the first image? Explain why or why not.

not proportionate

orig x	draw. y
3	10
5	15

Lesson Summary:

Scale Drawing: A drawing in which all lengths between points or figures in the drawing are reduced or enlarged proportional to the lengths in the actual picture. A constant of proportionality exists between corresponding lengths of the two images.

Reduction: The lengths in the scale drawing are smaller than those in the actual object or picture.

Enlargement/Magnification: The lengths in the scale drawing are larger than those in the actual object or picture.

One-to-one Correspondence: Each point in one figure corresponds to one and only one point in the second figure.

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Problem Set

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

1. _____

a. Actual Picture b. Scale Drawing

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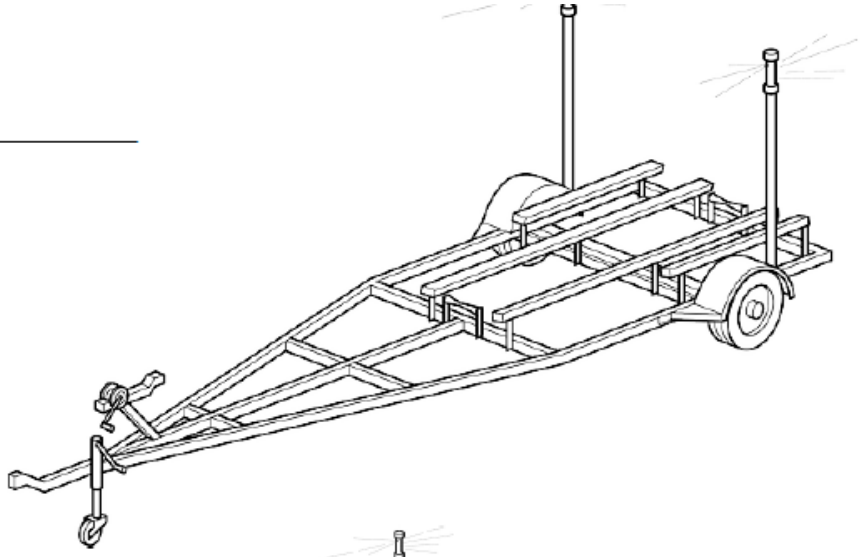
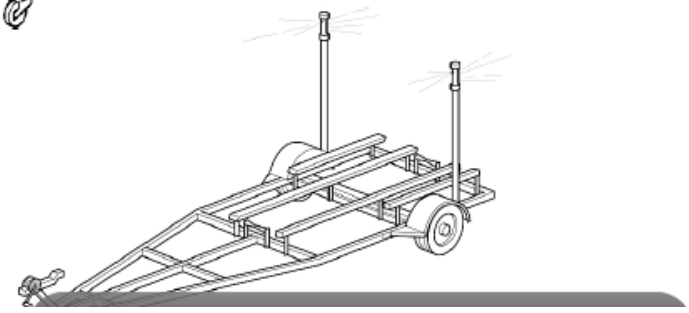
2. _____

a. Actual Picture



b. Scale Drawing



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3. _____

a. Actual Picture

b. Scale Drawing

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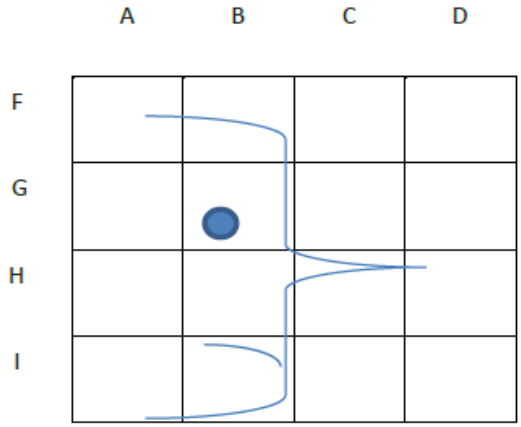
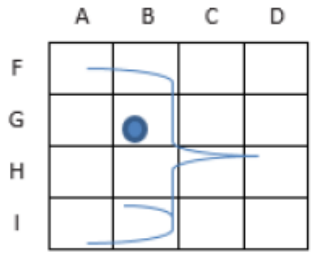
4. Using the grid and the abstract picture of a face, answer the following questions:





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?

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

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

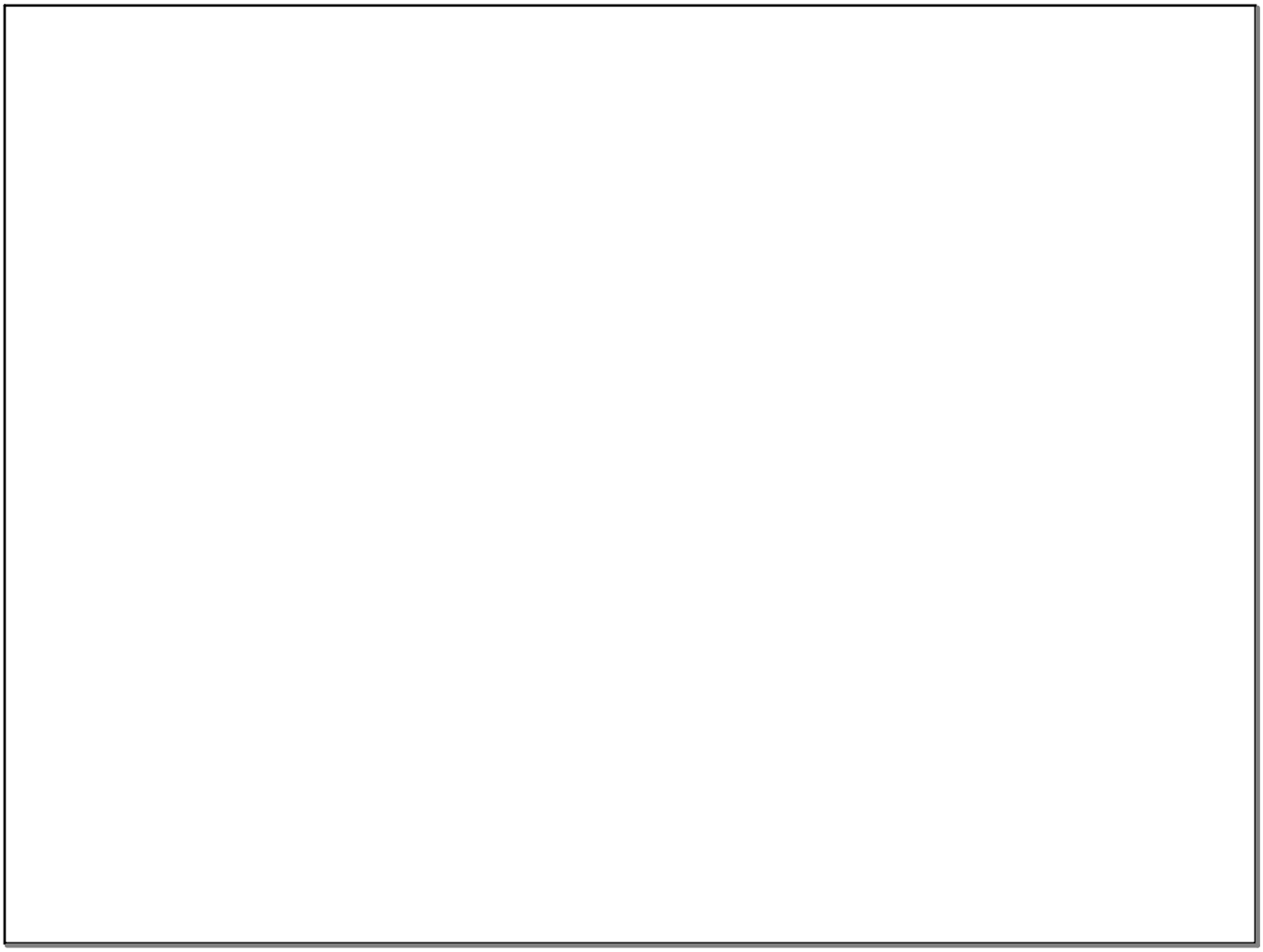
Cake 2: (1,6), (1, 12),(13,12), (13, 6)

How do you know?

12÷6=2

6÷2=3

6	12
2	6



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