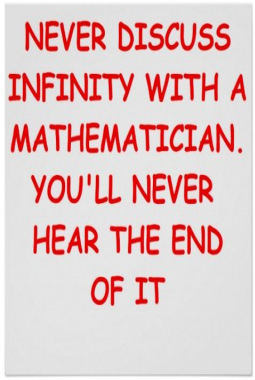
*"I know what we're going to do today."*

# Agenda:




1) Bell Ringer: 9 square puzzle

2) go over pgs 83-85

3) Ratios and Proportions Lesson 11:
- How do you compute an actual length given a scale drawing?

4) Homework: Lesson 11 (1-8)

Sep 15-10:44 PM

**Homework**

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

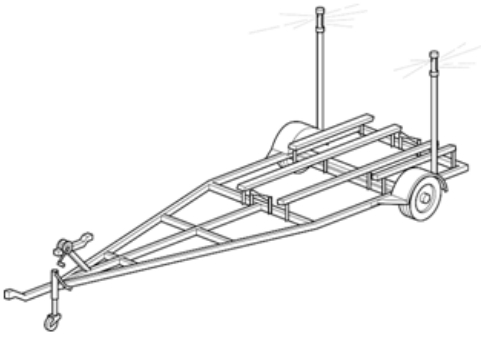
1. _____ _____

a. Actual Picture b. Scale Drawing

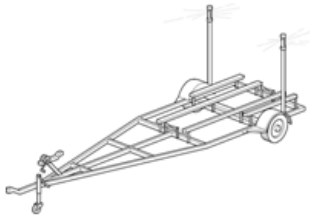
Dec 6-1:22 PM

2. _____

a. Actual Picture



b. Scale Drawing



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3. _____

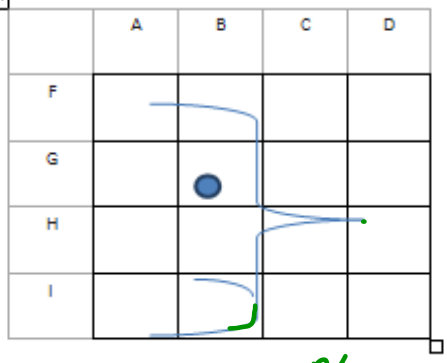
a. Actual Picture

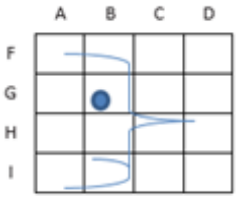
b. Scale Drawing


_____

Dec 6-1:22 PM

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




a. On the grid, where is the eye? BG

b. What is located in DH? tip of nose

c. In what part of the square BI is the chin located? Bottom Rt corner

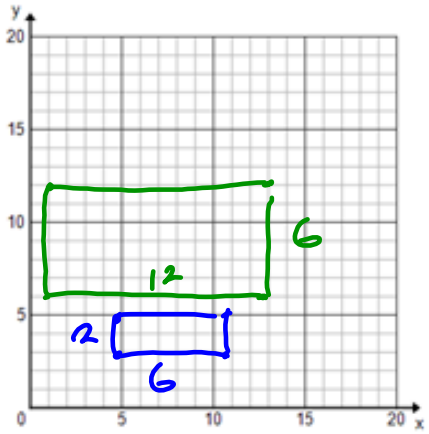
Dec 6-1:22 PM

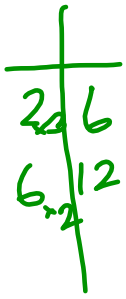
5. Use the graph provided to decide if the rectangular cakes are scale drawings of each other.

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

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

How do you know?




Dec 6-1:22 PM

**Exercise 2**

John is building his daughter doll house that is a miniature model of their house. The front of their house has a circular window with a diameter of 5 feet. If the scale factor for the model house is 1/30, make a sketch of the circular doll house window.

Dec 6-1:23 PM

orig | map
5,600,000 | 4

**Homework**

K H D — D C M

1. Giovanni went to Los Angeles, California for the summer to visit his cousins. He used a map of bus routes to get from the airport to the nearest bus station from his cousin's house. The distance from the airport to the bus station is 56 km. On his map, the distance was 4 cm. What is the scale factor?

5,600,000 cm

Scale factor $\frac{4}{5,600,000} = \frac{1}{1,400,000}$

1 cm = 14 km

2. Nicole is running for school president and her best friend designed her campaign poster which measured 3 feet by 2 feet. Nicole liked the poster so much she reproduced the artwork on rectangular buttons measuring 2 inches by $1\frac{1}{3}$ inches. What is the scale factor?

Scale factor $\frac{2}{36} = \frac{1}{18}$

$\frac{1\frac{1}{3}}{24} = \frac{1}{18}$

$\frac{4}{3} \times \frac{1}{24} = \frac{1}{18}$

3ft
2ft

orig | S.D.
36 in | 2 in
24 in | $1\frac{1}{3}$ in

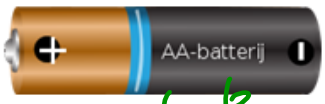
Dec 6-1:23 PM

Scale Factor: 1.83

Actual Picture


3.6

Scale Drawing




6.6

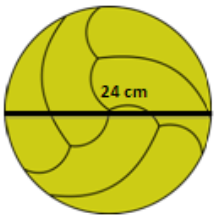
| orig | draw |
|---|---|
| 3.6 | 6.6 |

6.6 : 3.6

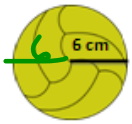
4. Find the scale factor using the given scale drawings and measurements below.

Scale Factor: 1/2

Actual Picture




Scale Drawing




| orig | draw |
|---|---|
| 24 | 12 |

Dec 6-1:23 PM

# Lesson 11: Computing Actual Lengths from a Scale Drawing

## Classwork

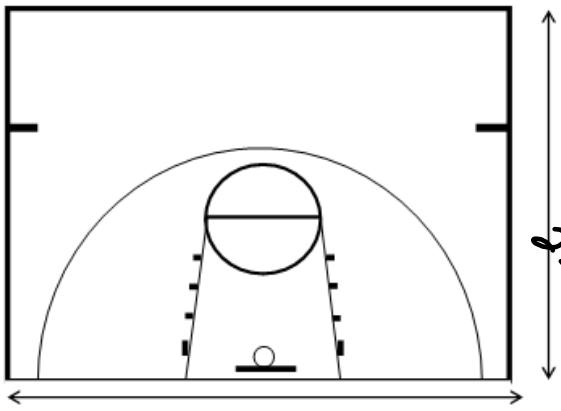
### Example 1: Basketball at Recess?

Vincent proposes an idea to the Student Government to install a basketball hoop along with a court marked with all the shooting lines and boundary lines at his school for students to use at recess. He presents a plan to install a half- court design as shown below. After checking with school administration, he is told it will be approved if it will fit on the empty lot that measures 25 feet by 75 feet on the school property. Will the lot be big enough for the court he planned? Explain.

Dec 11-12:12 PM

25 × 75

Scale Drawing: 1 inch on drawing corresponds to 15 feet of actual length




$1\frac{2}{3}$ inches

25 ft

| x orig | y Drawing |
|---|---|
| 15 | 1 |
| ? | $1\frac{2}{3}$ |
| ? | 2 |

25

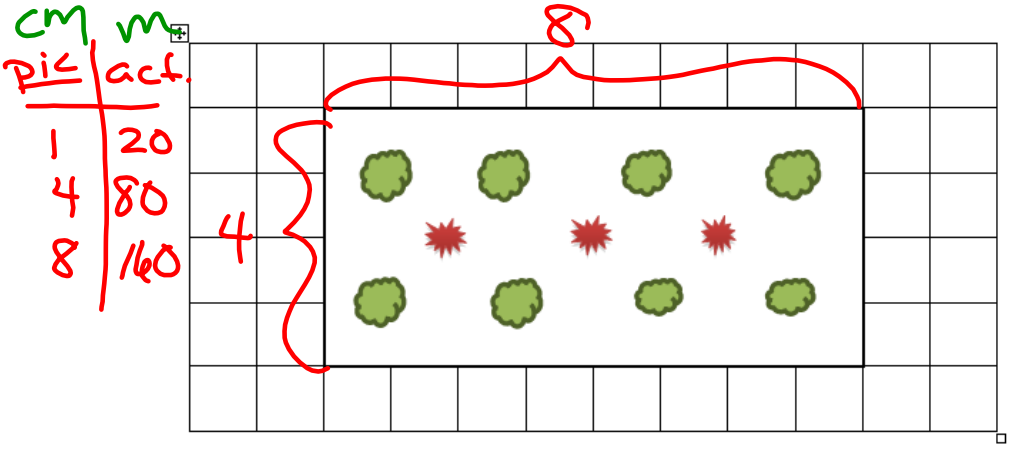
30

30 ft

Dec 11-12:12 PM

The diagram shown represents a garden. The scale is 1 cm for every 20 meters of actual length. Find the actual length and width of the garden based upon the given drawing. Each square in the drawing measures 1 cm by 1 cm.

| cm pic | m act. |
|---|---|
| 1 | 20 |
| 4 | 80 |
| 8 | 160 |



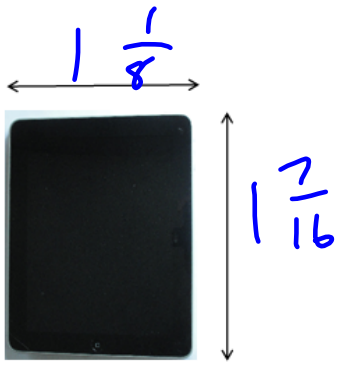

Dec 11-12:12 PM

**Example 3**

A graphic designer is creating an advertisement for a tablet. She needs to enlarge the picture given here so that 0.25 inches on the scale picture will correspond to 1 inch on the actual advertisement. What will be the length and width of the tablet on the advertisement?

| Scale | actual |
|---|---|
| $\frac{1}{4}$ .25 | 1 |
| $1\frac{1}{8}$ | $4\frac{1}{2}$ |
| $1\frac{7}{16}$ | $5\frac{3}{4}$ |

$\frac{23}{4} \times \frac{4}{1}$




Scale Picture of Tablet

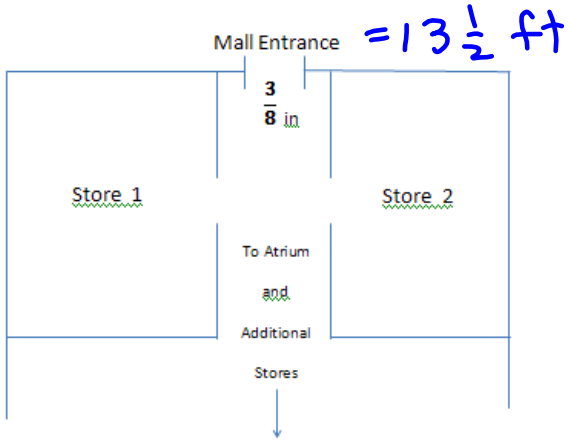
Dec 11-12:12 PM

**Exercises**

1. Students from the high school are going to perform one of the acts from their upcoming musical at the atrium in the mall. The students want to bring some of the set with them so that the audience can get a better feel of the whole production. The backdrop that they want to bring has panels that measure 10 feet by 10 feet. The students are not sure if they will be able to fit these panels through the entrance of the mall since the panels need to be transported flat (horizontal). They obtain a copy of the mall floor plan, shown below, from the city planning office. Use this diagram to decide if the panels will fit through the entrance. Use a ruler to measure.

| Mall | Dr. |
|---|---|
| $4\frac{1}{2}$ ft | $\frac{1}{8}$ in |
| 10 | |
| 13.5 | $\frac{3}{8}$ in |

$\times 3$ $\times 3$




Scale:

$\frac{1}{8}$ inch on drawing represents $4\frac{1}{2}$ feet of actual length

Dec 11-12:12 PM

Answer the following questions.

a. Find the actual distance of the mall entrance and determine whether the set panels will fit.

13.5

b. What is the scale factor? What does it tell us?

drawing = actual

$\frac{1}{8}$ in = $4\frac{1}{2}$ ft

$\frac{1}{8}$ in = 54 in

×8 ×8

1 in = 432 in

36 ft

4 ft = 48 in

$\frac{1}{2}$ ft = 6 in

54 in

Dec 11-12:13 PM

## Homework

1. A toy company is redesigning their packaging for model cars. The graphic design team needs to take the old image shown below and resize it so that $\frac{1}{2}$ inch on the old packaging represents $\frac{1}{3}$ inch on the new package. Find the length of the image on the new package.

Car image length on old packaging measures 2 inches

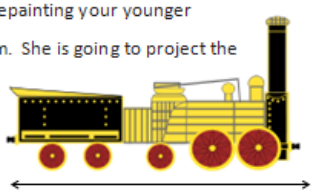
| old | new |
|---|---|
| $\frac{1}{2}$ | $\frac{1}{3}$ |
| 1 | $\frac{2}{3}$ |
| 2 × $\frac{2}{3}$ | $\frac{4}{3}$ |

Dec 11-12:13 PM

2. The city of St. Louis is creating a welcome sign on a billboard for visitors to see as they enter the city. T he following picture needs to be enlarged so that $\frac{1}{2}$ inch represents 7 feet on the actual billboard. Will it fit on a billboard that measures 14 feet in height?

Dec 11-12:13 PM

3. Your mom is repainting your younger brother's room. She is going to project the image shown below onto



his wall so that she can paint an enlarged version as a mural. How long wiill the mural be if the projector uses a scale where 1 inch of the image represents $\frac{1}{2}$ feet on the wall?

Dec 11-12:13 PM

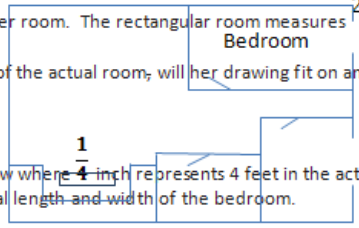
4. A model of a skyscraper is made so that 1 inch represents 75 feet. What is the height of the actual building if the height if the model is $18\overline{5}$ inches?

5. The portrait company that takes little league baseball team photos is offering an option where a portrait of your baseball pose can be enlarged to be used as a wall decal (sticker). Your height in the portrait measures $3\frac{1}{2}$ inches. If the company uses a scale where 1 inch on the portrait represents 20 inches on the wall decal, find the height on the wall decal. Your actual height is 55 inches. If you stand next to the wall decal, will it be larger or smaller than you?

6. The sponsor of a 5K run/walk for charity wishes to create a stamp of its billboard to commemorate the event. If the sponsor uses a scale where 1 inch represents 4 feet and the billboard is a rectangle with a width of 14 feet and a length of 48 feet, what will be the shape and size of the stamp?

Dec 11-12:13 PM

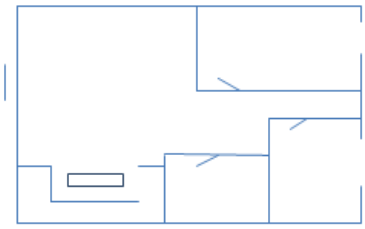
7. Danielle is creating a scale drawing of her room. The rectangular room measures $20\frac{1}{2}$ feet by 25 ft. If her drawing uses the scale 1 inch represents 2 feet of the actual room, will her drawing fit on an $8\frac{1}{2}$ in. by 11 in. piece of paper?




8. A model of an apartment is shown below where $\frac{1}{4}$ inch represents 4 feet in the actual apartment. Use a ruler to measure the drawing and find the actual length and width of the bedroom.

Dec 11-12:13 PM

Bedroom



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Nov 14-2:46 PM