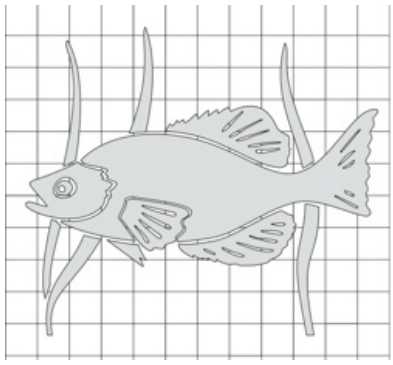
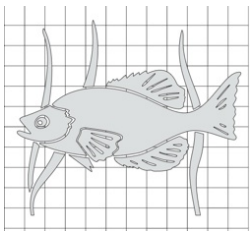
Chapter 7:

Similarity and Transformations

Mar 26-10:37 AM





Scale Diagrams: A diagram that is an enlargement or reduction of another diagram.

Mar 11-7:36 PM

The measurements in each diagram are compared.

Scale Factor = $\frac{\text{Length of Scale Diagram}}{\text{Length of Original Diagram}}$

$SF = \frac{s}{o}$

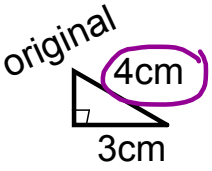
The scale factor can be written as a fraction or decimal.

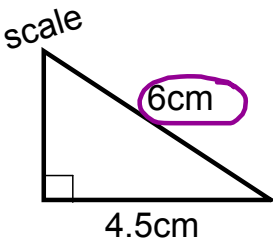
If the scale factor is less than one, the diagram is a reduction, larger than one indicates the diagram is an enlargement.

Mar 11-7:53 PM

When pairs of corresponding lengths have the same scale factor, we say that the

corresponding lengths are proportional.





Hypotenuse

$\frac{\text{scale}}{\text{original}} = \frac{6}{4}$

$= 1.5$

Leg

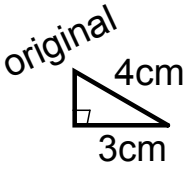
$\frac{\text{scale}}{\text{original}} = \frac{4.5}{3}$

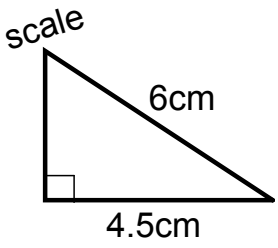
$= 1.5$

Mar 11-8:14 PM

When pairs of corresponding lengths have the same scale factor, we say that the

corresponding lengths are proportional.





Hypotenuse

$\frac{\text{scale}}{\text{original}} = \frac{\square}{\square}$

Leg

$\frac{\text{scale}}{\text{original}} = \frac{\square}{\square}$

Mar 11-8:14 PM

Determine the scale factor.

Scale Factor = $\frac{\text{Scale Diagram}}{\text{Original Diagram}}$

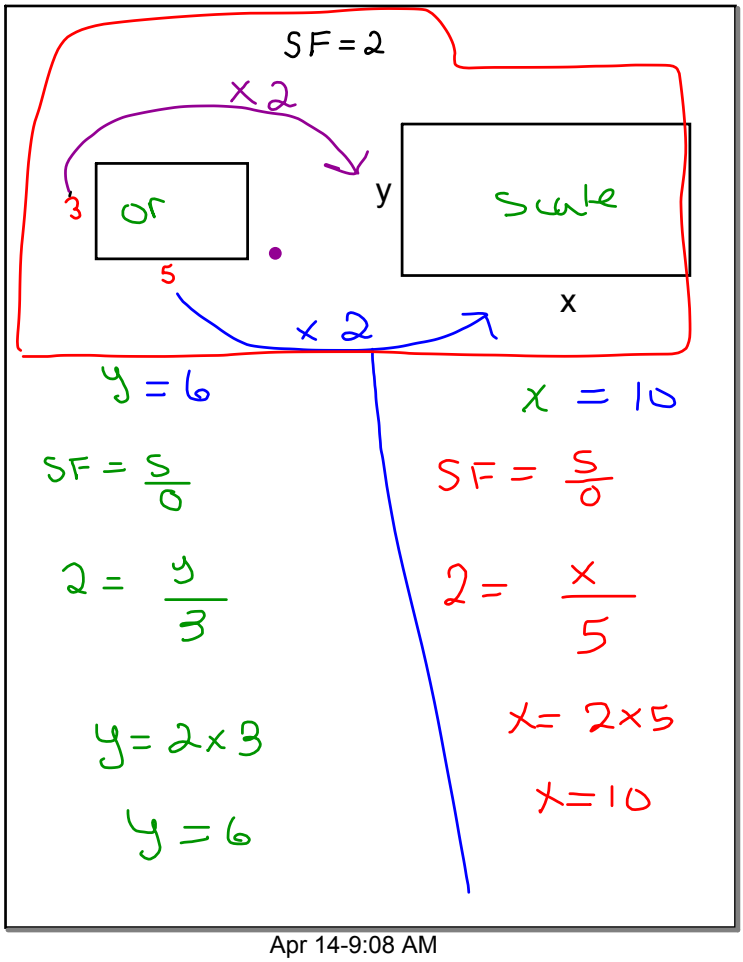
$SF = \frac{s}{o}$

$SF = \frac{2.5}{3.5}$

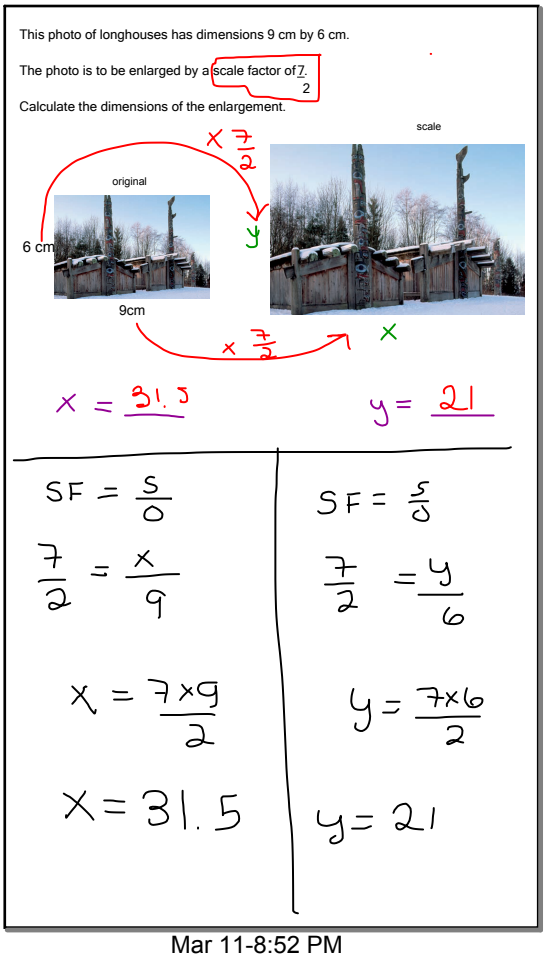
$SF = 0.71$

$x = 5.25$

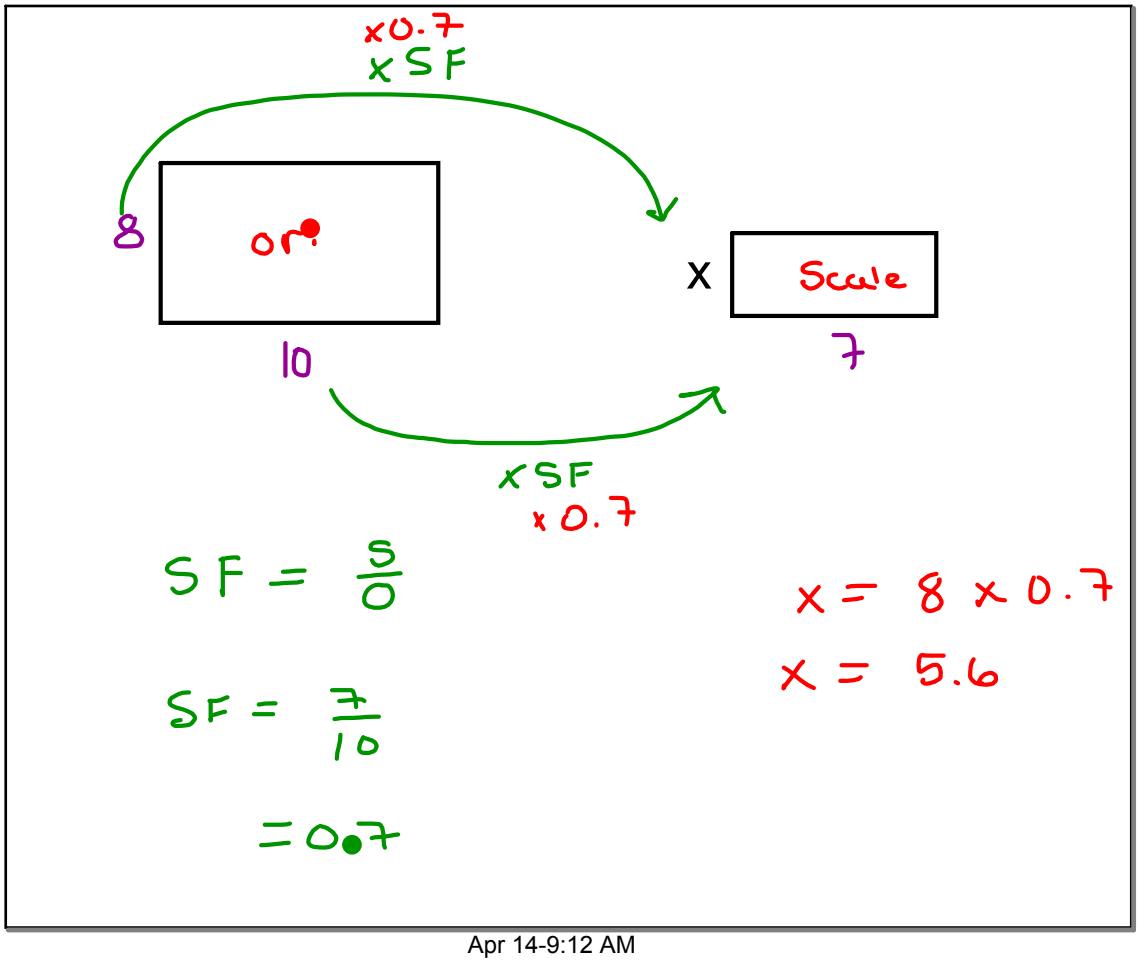
Mar 11-8:06 PM



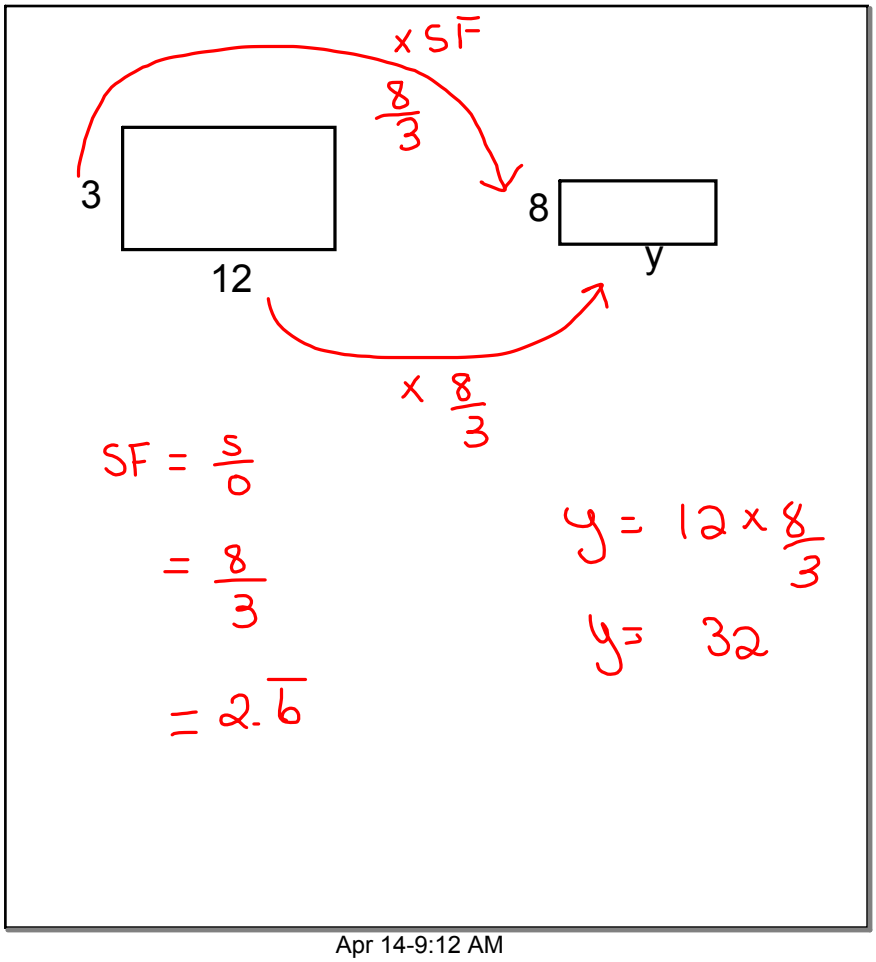
Apr 14-9:08 AM



Mar 11-8:52 PM



Apr 14-9:12 AM



Apr 14-9:12 AM

Sometimes you are only given the scale diagram....

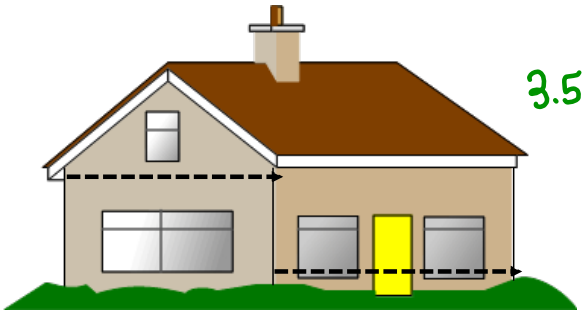
A scale may be given as a ratio.

The scale on this scale diagram of a house is 1:150.

This means that 1cm on the diagram represents 150 cm or 1.5m on the house.

In other words... the scale factor is $\frac{1}{150}$

How wide is the actual house??



1 : 150

3.5 ↔ 3.5

3.5 cm : x

x = 525cm

Mar 11-9:07 PM

2.5 cm : 300 Km

SF × $\frac{12}{2.5} = 4.8$

12 cm : x

× 4.8

x = 1440

$\frac{x}{300} = \frac{12}{2.5}$

$x = \frac{12 \times 300}{2.5}$

x = 1440

Apr 10-9:13 AM

Scale Diagrams:

Is this an enlargement or a reduction?

1) An original photo of a cat has dimensions 18 cm by 40.5 cm. A second pictures is made using a scale factor of 0.4. Determine the dimensions of the scaled picture. (Show your work)

Mar 11-7:36 PM

1 cm = 10 mm

1 m = 100 cm

1 m = 1000 mm

Homework

10 100

mm cm m

Page 323

#4,5, 6,

8,9,12

Page 329

#4,5, 6

8, 11(ace),12b, 14

Four data sets