Curriculum Outcomes:

(SS3) Demonstrate an understanding of similarity of polygons.

(SS4) Draw and interpret scale diagrams of 2-D shapes.

(SS5) Demonstrate an understanding of line and rotation symmetry.

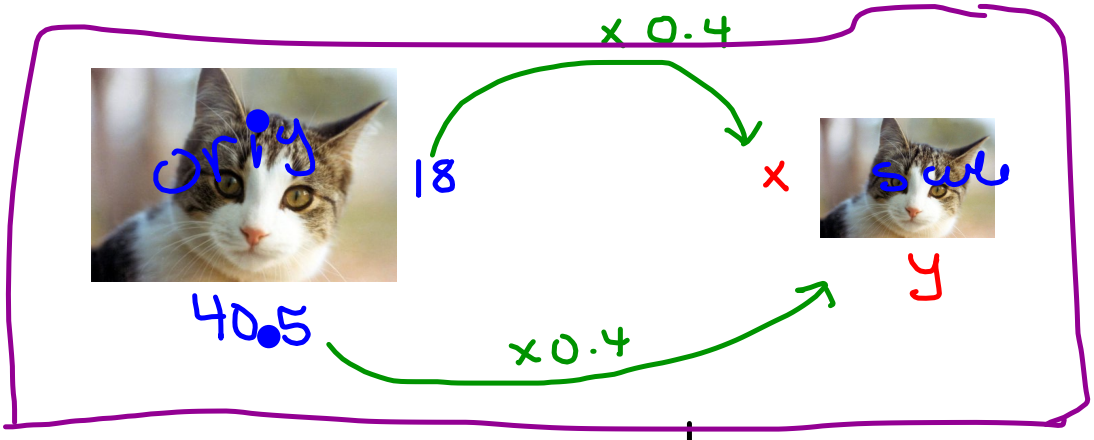
Student Friendly:

How are diagrams related in size? To increase a length by a certain number be it a fraction or a whole number.

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)



x:

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

$0.4 = \frac{x}{18}$

$x = 0.4(18)$

$x = 7.2$

y

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

$0.4 = \frac{y}{40.5}$

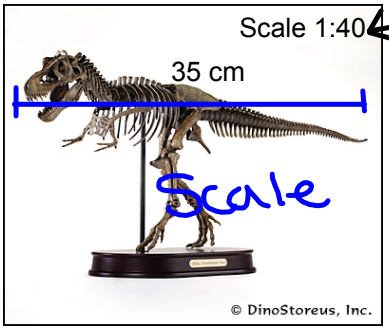
$y = 0.4(40.5)$

$y = 16.2$

Scale Diagrams:

Day 2

2) The following is a scale diagram of "Sue" the T-Rex. Using the ratio determine the true length of Sue



$SF = \frac{1\text{ cm}}{40\text{ cm}}$

$SF = \frac{?}{0}$

$\frac{1}{40} \overset{(x)}{=} \frac{35}{x} \overset{(x)}{}$

$\frac{x}{40} \overset{(40)}{=} 35 \overset{(40)}{}$

$x = 1400\text{ cm}$

$\frac{2}{3} = \frac{4}{x}$

$\frac{2x}{2} = \frac{3(4)}{2}$

$x = 6$

$\frac{2}{3}^{(x)} = \frac{4}{x}^{(x)}$

$\frac{2x}{2}^{(3)} = 4^{(3)}$

$\frac{2x}{2} = \frac{12}{2}$

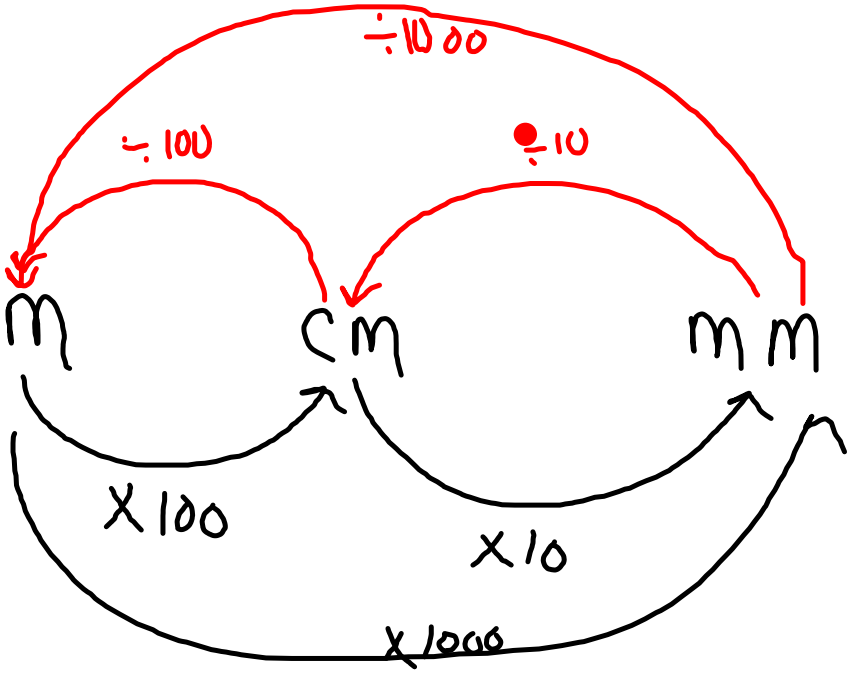
$x = 6$

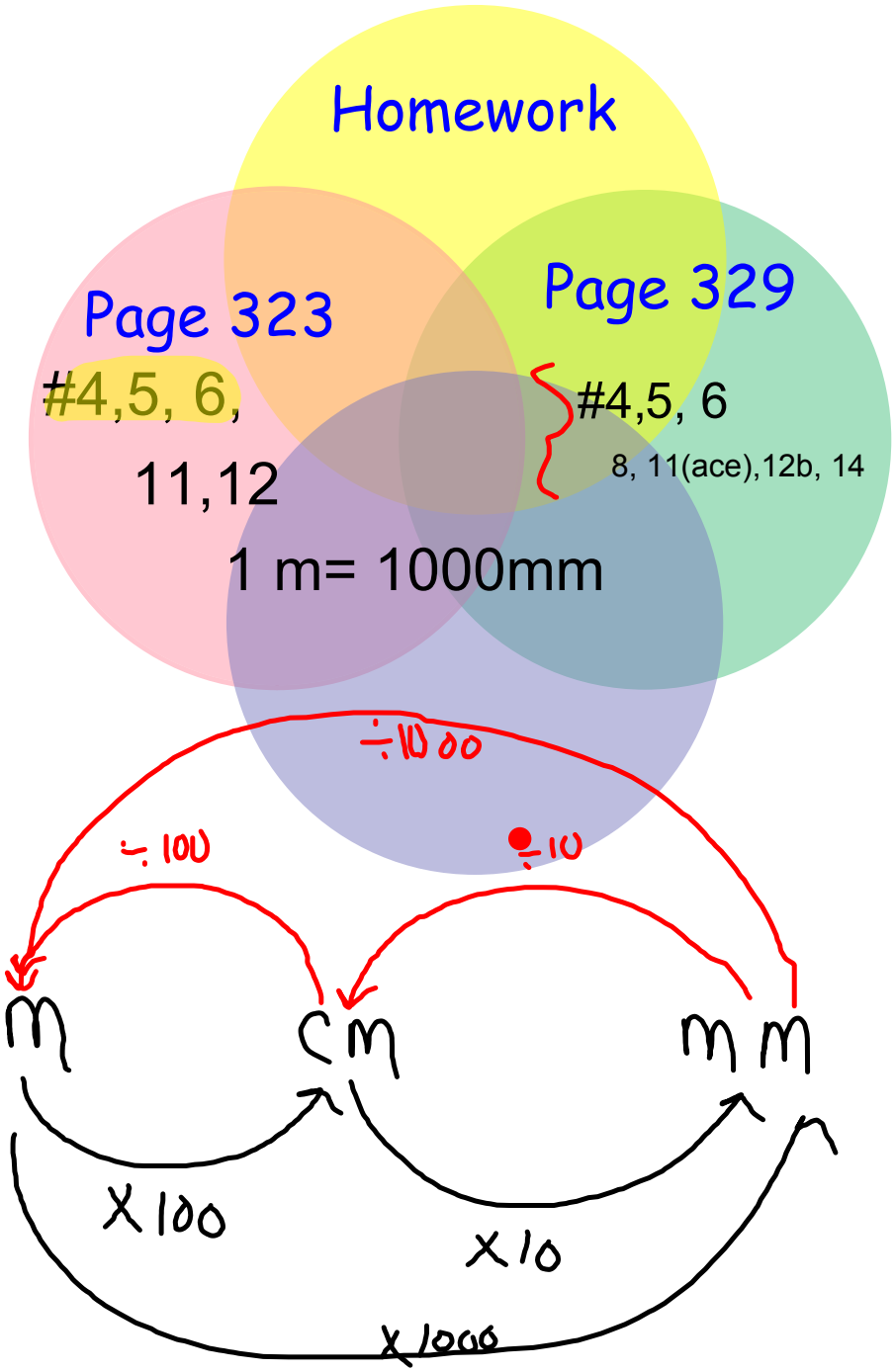
$$\frac{1}{40} = \frac{35}{x}$$

$$(x)\ 0.025 = \frac{35}{x}\ (x)$$

$$\frac{x(0.025)}{0.025} = \frac{35}{0.025}$$

$$x = 1400$$


÷1000
÷100
÷10
m
cm
mm
x100
x10
x1000


Homework
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#4,5, 6
8, 11(ace),12b, 14
1 m= 1000mm
÷1000
÷100
÷10
m
cm
mm
x100
x10
x1000

Homework Solutions

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4a) $\frac{\text{Scale Bottom}}{\text{original Bottom}} = \frac{8}{2} = 4$ $\qquad$ $\frac{\text{Scale Side}}{\text{original Side}} = \frac{8}{2} = 4$

Scale factor is 4

4b) $\frac{\text{Scale Bottom}}{\text{original Bottom}} = \frac{3}{2} = 1.5$ $\qquad$ $\frac{\text{Scale Side}}{\text{original Side}} = \frac{6}{4} = 1.5$

Scale factor is 1.5

5)

side length of original	scale factor	calculate length of scale side
a) 12 cm	3	12 cm x 3 = 36 cm
b) 82 mm	5/2	82 mm x 5/2 =205 mm
c) 1.55 cm	4.2	1.55 cm x4.2 = 6.51 cm
d)45 mm	3.8	45 mm x 3.8 =171 mm
e) 0.8 cm	12.5	0.8 cm x 12.5= 10 cm

6) Original 17.5 cm by 12.5 cm

a) 17.5 x 12 = 210 cm
12.5 x 12 = 150 cm

210 cm by 150 cm

b) 17.5 x 20 = 350 cm
12.5 x 20 = 250 cm

350 cm by 250 cm

c) 17.5 x 3.5 = 61.25 cm
12.5 x 3.5 = 43.75 cm

61.25 cm by 43.75 cm
rounded to nearest cm
61 cm by 44 cm

c) 17.5 x (4.25) = 74.375 cm

12.5 x 4.25 = 53.125 cm
Rounded to nearest cm
74 cm by 53 cm