



## Scale Diagrams:

Warm Up April 8

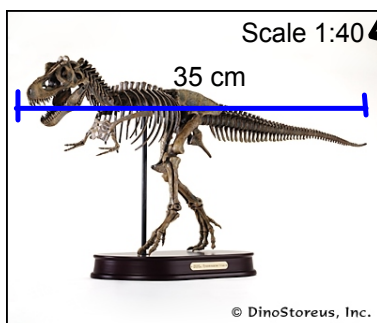


1) An original photo of a cat has dimensions 18 cm by 40.5 cm. A second picture is made using a scale factor of 0.4. Determine the dimensions of the scaled picture. (Show your work)

$$\begin{array}{l}
 \text{S.F.} = 1 \\
 \text{S.F.} < 1 \text{ Reduction} \\
 \text{S.F.} > 1 \text{ Enlargement}
 \end{array}
 \left\{
 \begin{array}{l}
 18(0.4) = 7.2 \text{ cm} \\
 40.5(0.4) = 16.2 \text{ cm} \\
 \text{The dimensions are } 7.2 \text{ cm} \times 16.2 \text{ cm}
 \end{array}
 \right.$$

Is this an enlargement or a reduction?

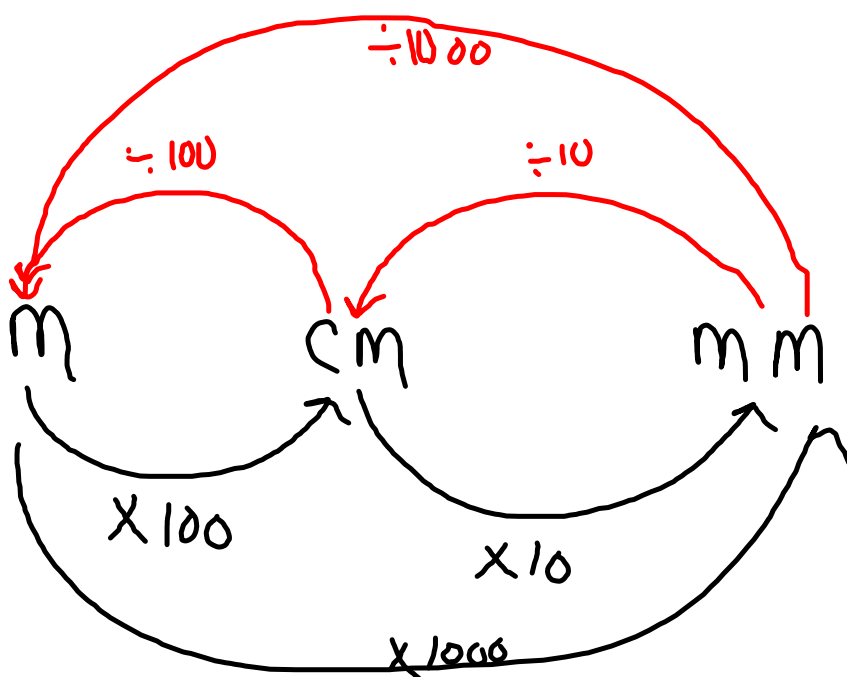
2) The following is a scale diagram of "Sue" the T-Rex. Using the ratio determine the true length of Sue



$$\begin{aligned}
 35 \text{ cm} \times 40 &= 1400 \text{ cm} \\
 &= 14 \text{ m}
 \end{aligned}$$

SUE IS A SENSATION. It's not just that she's 42 feet long (14 m) and 65 million years old. She's the world's most complete, best preserved, and largest *Tyrannosaurus rex* skeleton. More than 10,000 visitors went to her May 17, 2000, debut at Chicago's Field Museum of Natural History.





5 mm  
0.5 cm  
0.005 m

# 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 x 4.2 = 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

$$a) 17.5 \times 12 = 210 \text{ cm}$$

$$12.5 \times 12 = 150 \text{ cm}$$

210 cm by 150 cm

$$b) 17.5 \times 20 = 350 \text{ cm}$$

$$12.5 \times 20 = 250 \text{ cm}$$

350 cm by 250 cm

$$c) 17.5 \times 3.5 = 61.25 \text{ cm}$$

$$12.5 \times 3.5 = 43.75 \text{ cm}$$

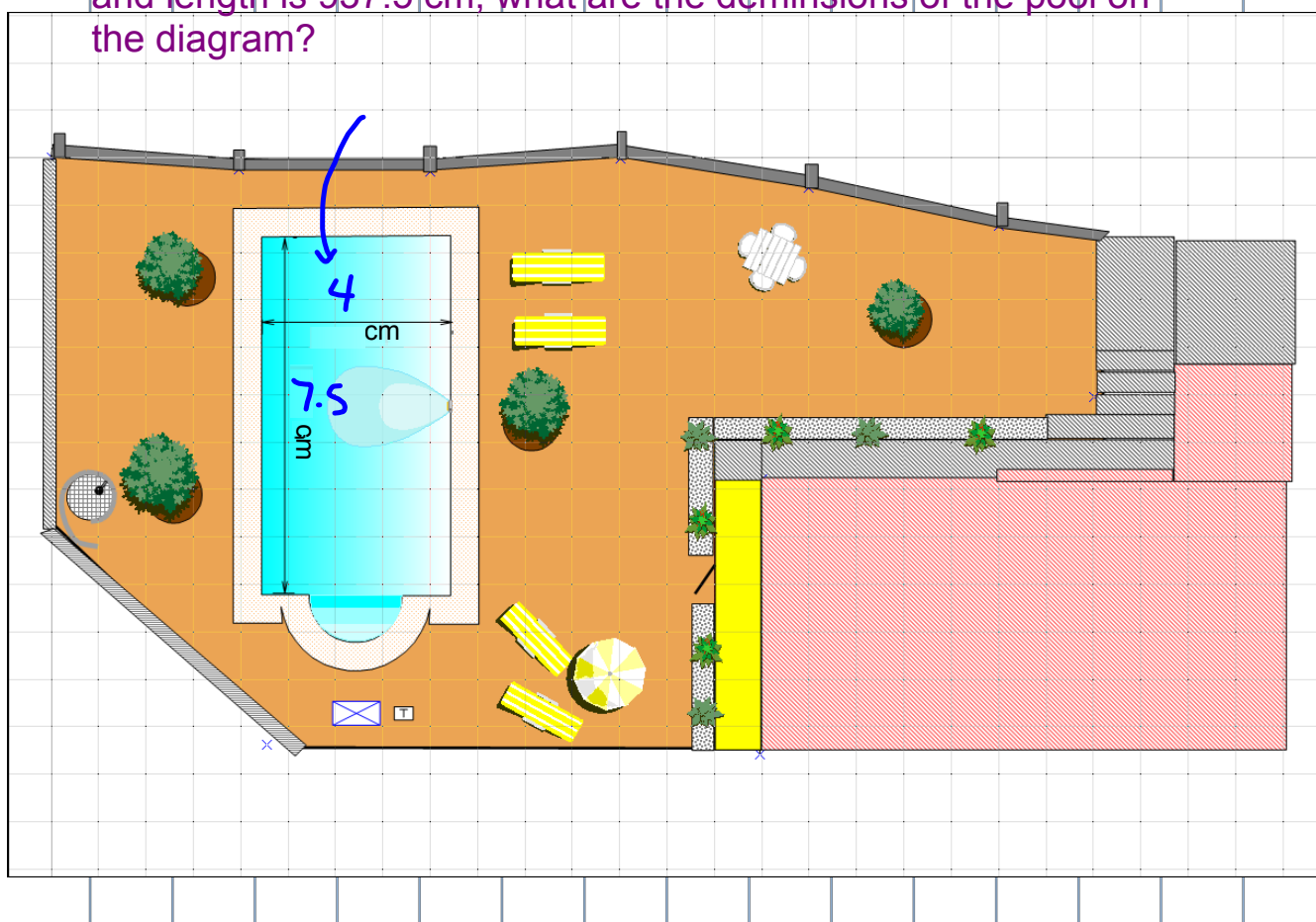
61.25 cm by 43.75 cm  
rounded to nearest cm  
61 cm by 44 cm

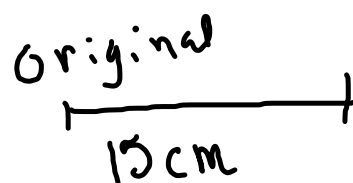
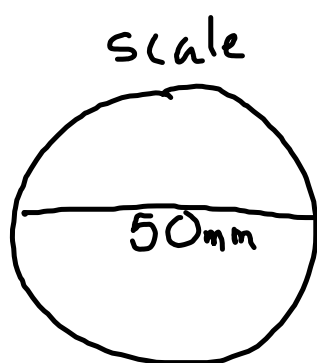
$$c) 17.5 \times (4.25) = 74.375 \text{ cm}$$

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

Here is a scale diagram of back yard which has a scale of **1:125**

If the true dimensions of the pool (in cm) has width 500 cm and length is 937.5 cm, what are the deminsions of the pool on the diagram?



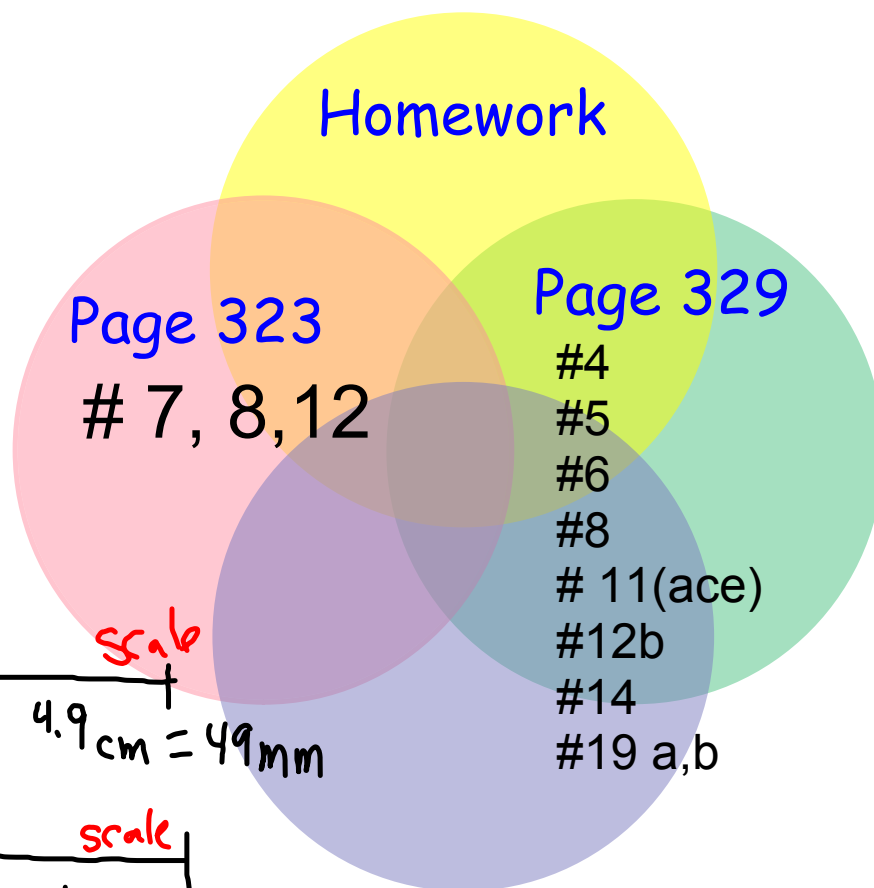


Find the Scale factor

$$50\text{mm} = 5.0\text{cm}$$

Must have same units

$$\begin{aligned} \text{S.F.} &= \frac{S}{O} \\ &= \frac{5\text{cm}}{15\text{cm}} \\ &= \frac{1}{3} \end{aligned}$$



7)  $\overline{\hspace{2cm}}^{\text{scale}}$   
 $4.9 \text{ cm} = 49 \text{ mm}$

8)  $\overline{\hspace{2cm}}^{\text{scale}}$   
 $1.5 \text{ cm} = 15 \text{ mm}$