Unit 10: Similar Figures

Name:_____

Lesson 2: Similarity and Measurement

Hour:_____

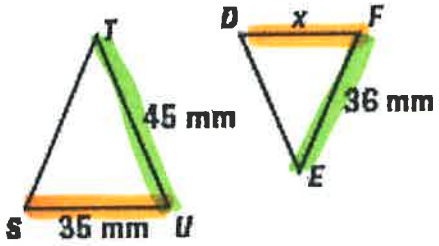
Notes 10.2

Learning Targets

- ☐ I can find the missing measurement of similar figures.
- ☐ I can use indirect measurement to calculate an unknown measure.

Find the Missing Measure of Similar Figures

1. $\Delta STU \sim \Delta DEF$



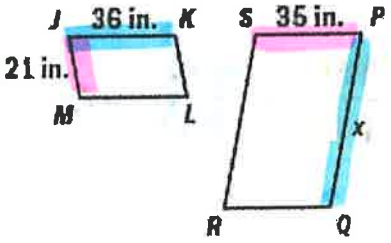
$\frac{SU}{FD} = \frac{TU}{EF} \rightarrow \frac{35}{x} = \frac{45}{36}$

$45x = (35)(36)$

$45x = 1260$

$x = 28$ MM

2. $JKLM \sim PQRS$



$\frac{JK}{PQ} = \frac{JM}{PS} \rightarrow \frac{36}{x} = \frac{21}{35}$

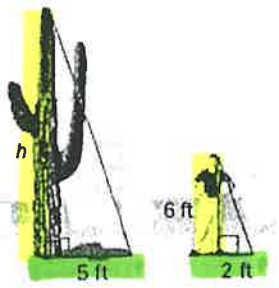
$21x = (36)(35)$

$21x = 1260$

$x = 60$ in

Indirect Measure

1.



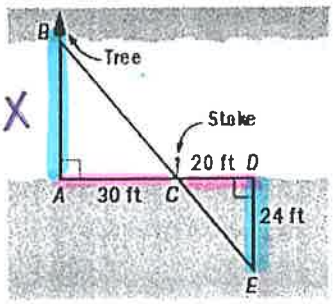
$\frac{h}{6} = \frac{5}{2}$

$2h = (5)(6)$

$2h = 30$

$h = 15$ feet

2.



$\frac{BA}{ED} = \frac{AC}{DC}$

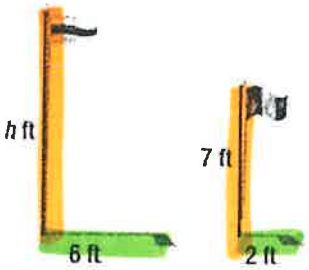
$\frac{x}{24} = \frac{30}{20}$

$20x = (30)(24)$

$20x = 720$

$x = 36$ ft

Indirect Measure Continued

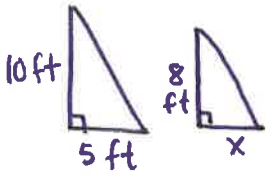
3. 

$\frac{h}{7} = \frac{6}{2}$

$2h = 42$

$h = 21$ feet

4. If a 10 ft tall tent casts a 5 ft shadow, then how long is the shadow that a 8 ft tall adult elephant casts?

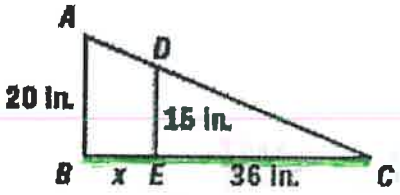


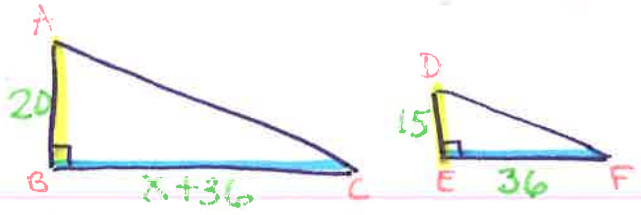
$\frac{10}{8} = \frac{5}{x}$

$10x = 40$

$x = 4$ ft

Algebra and Similar Triangles

1. 



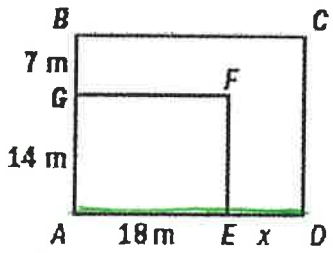
$\frac{AB}{DE} = \frac{BC}{EF} \rightarrow \frac{20}{15} = \frac{(x+36)}{36}$

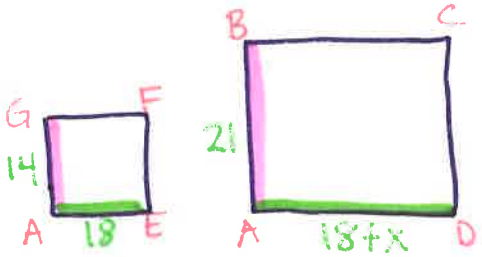
$(20)(36) = 15(x+36)$

$720 = 15x + 540$

$180 = 15x$

$12 = x$ inches

2. 



$\frac{AG}{AB} = \frac{AE}{AD} \rightarrow \frac{14}{21} = \frac{18}{(18+x)}$

$(21)(18) = 14(18+x)$

$378 = 252 + 14x$

$126 = 14x$

$9 = x$ Meters