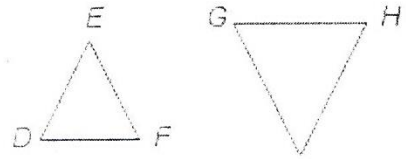
7-2 to 7-3 Homework

Name Master 6

Date _____ Block _____

1-2: For each pair of similar polygons, list all pairs of congruent angles, and write a proportion that relates the corresponding sides (the proportionality statement)

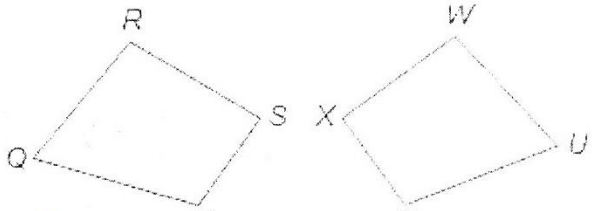
1. $\triangle DEF \sim \triangle GHI$



$\angle D \cong \angle G, \angle E \cong \angle H, \angle F \cong \angle I$

$\frac{DE}{GH} = \frac{EF}{HI} = \frac{DF}{GI}$

2. PQRS ~ TUWX

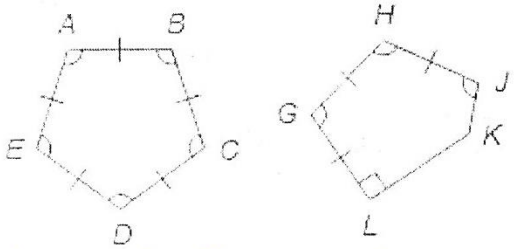


$\angle P \cong \angle T, \angle Q \cong \angle U, \angle R \cong \angle W, \angle S \cong \angle X$

$\frac{PQ}{TU} = \frac{QR}{UW} = \frac{RS}{WX} = \frac{PS}{TX}$

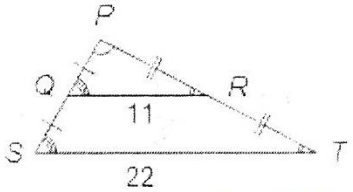
3-4: Determine whether each pair of figures is similar. If so, write the similarity statement and find the scale factor. If not, explain your reasoning.

3.



No- not all corr. $\angle$s are $\cong$

4.

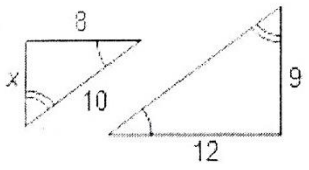


Yes, $\triangle PQR \sim \triangle PST$

SF = 1:2

5-8: For each pair of similar polygons, find the value of x. Write a proportion and show your algebra.

5.

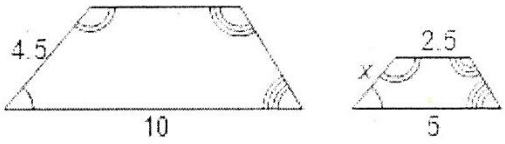


$12x = 72$

$x = 6$

$\frac{x}{9} = \frac{8}{12} = \frac{10}{}$

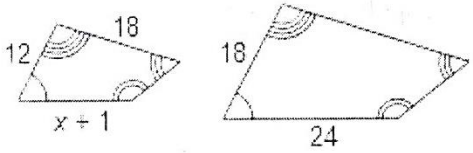
6.



$\frac{4.5}{x} = \frac{10}{5}$ $10x = 22.5$

$x = 2.25$

7.

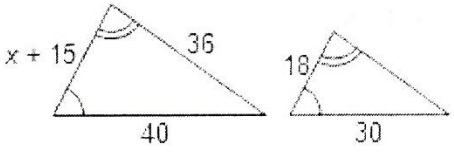


$\frac{12}{18} = \frac{x+1}{24}$ $18x + 18 = 288$

$18x = 270$

$x = 15$

8.

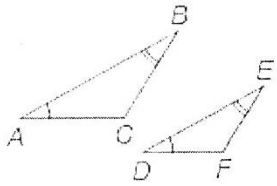


$\frac{x+15}{18} = \frac{40}{30}$ $30x + 450 = 720$

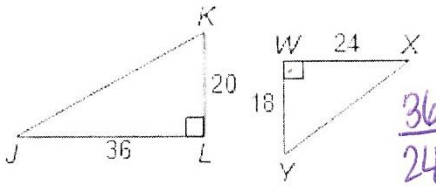
$30x = 270$

$x = 9$

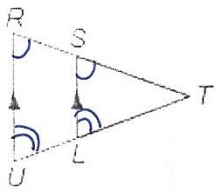
9-14: Determine whether the given triangles are similar. If they are similar, state why (SSS ~, SAS ~, or AA~) and then write a similarity statement.

9. 

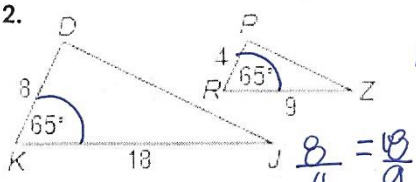
$\triangle ABC \sim \triangle DEF$ by AA~

10. 

$\frac{36}{24} \neq \frac{20}{18}$ Not ~

11. 

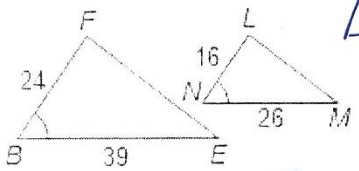
$\triangle TSL \sim \triangle TRU$ by AA~

12. 

$\triangle DKJ \sim \triangle PRZ$ by SAS~

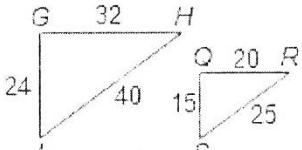
$\frac{8}{4} = \frac{18}{9}$

$72 = 72$

13. 

$\triangle FBE \sim \triangle LNM$ by SAS~

$\frac{24}{16} = \frac{39}{26}$ $624 = 624$

14. 

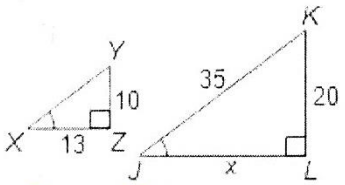
$\triangle GHI \sim \triangle QRS$ by SSS~

$\frac{24}{15} = \frac{32}{20} = \frac{40}{25}$

1.6 1.6 1.6

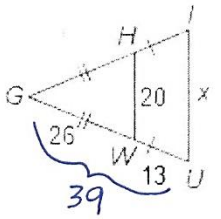
15-18: In each pair of similar triangles, write a proportion, solve for x, and then find each measure.

15. JL = 26



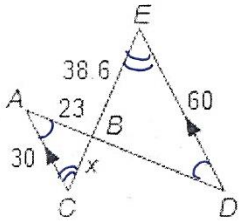
$\frac{13}{x} = \frac{10}{20}$ $10x = 260$ $x = 26$

16. IU = 30



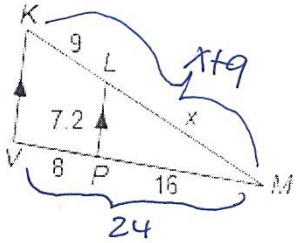
$\frac{20}{x} = \frac{26}{39}$ $26x = 780$ $x = 30$

17. BC = 19.3



$\frac{30}{60} = \frac{23}{?} = \frac{x}{38.6}$ $60x = 1158$ $x = 19.3$

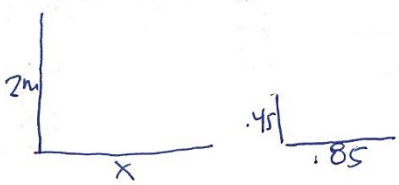
18. LM = 18



$\frac{x}{x+9} = \frac{16}{24}$ $24x = 16x + 144$ $8x = 144$ $x = 18$

19: Solve the following word problem. Show work and round your answer to the nearest hundredth.

19. The heights of two vertical posts are 2 meters and .45 meter. When the shorter post casts a shadow that is 0.85 meters long, what is the length of the longer post's shadow?



$\frac{2}{.45} = \frac{x}{.85}$ $.45x = 1.7$ $x = 3.77$

$\approx$ 3.8 meters