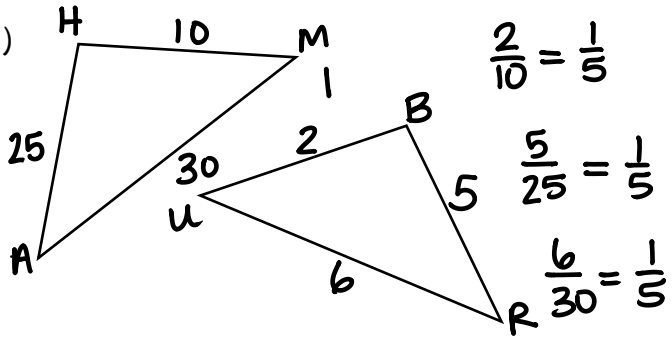
Name: Key

7.3 Homework

Determine if each pair of triangles is similar by showing ALL work. If they are similar, write a similarity statement and explain in complete full sentences why you chose the postulate. If they are not similar, explain why not.

1)



$\frac{2}{10} = \frac{1}{5}$

$\frac{5}{25} = \frac{1}{5}$

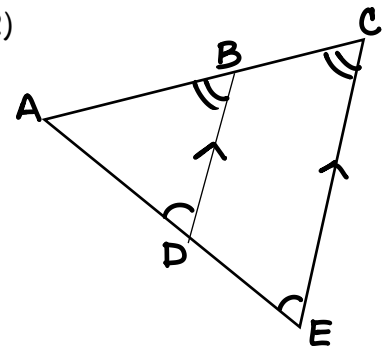
$\frac{6}{30} = \frac{1}{5}$

Similar: (YES) or NO

△HAM ~ △BRU

Reason: The given side lengths are proportion because $\frac{BU}{HM} = \frac{1}{5}$, $\frac{BR}{HA} = \frac{1}{5}$, $\frac{UR}{AM} = \frac{1}{5}$. if all corresponding side lengths are proportional, then the triangles are similar by SSS~.

2)

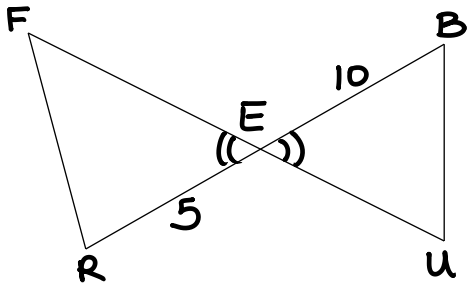


Similar: (YES) or NO

△ABD ~ △ACE

Reason: Because $\overline{BD} \parallel \overline{CE}$ is given, $\angle ABD \cong \angle ACE$ b/c they are corresp. angles. Similarly, $\angle BDA \cong \angle CEA$. Since two pairs of corresponding angles are $\cong$, the triangles are similar by AA~.

3)

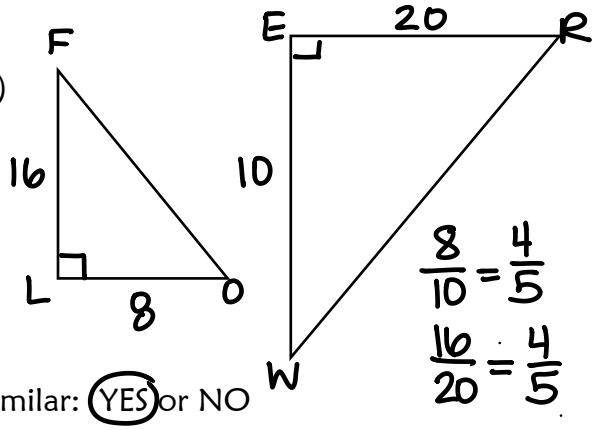


Similar: YES or (NO) $\frac{5}{10} = \frac{1}{2}$

△____ ~ △____

Reason: There is not enough information to prove that the triangles are similar when using any of the postulates (SAS~, AA~, or SSS~).

4)



$\frac{8}{10} = \frac{4}{5}$

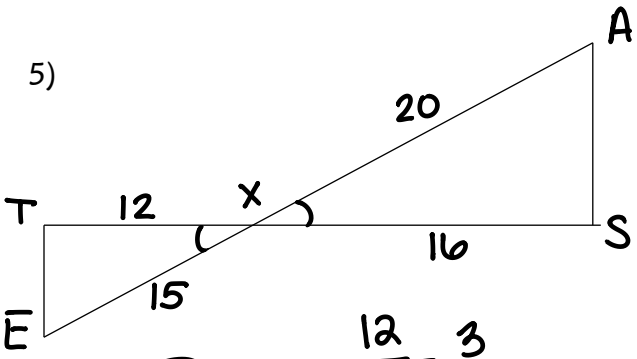
$\frac{16}{20} = \frac{4}{5}$

Similar: (YES) or NO

△FLO ~ △REW

Reason: Since $\angle L$ and $\angle E$ are both right $\angle$s, this means that they are $\cong$. Also, the sides $\frac{LO}{EW} = \frac{4}{5}$ and $\frac{FL}{ER} = \frac{4}{5}$ are proportional. Since $\angle L$ and $\angle E$ are included $\angle$s in between the proportional sides, then these triangles are similar b/c of SAS~.

5)



Similar: (YES) or NO

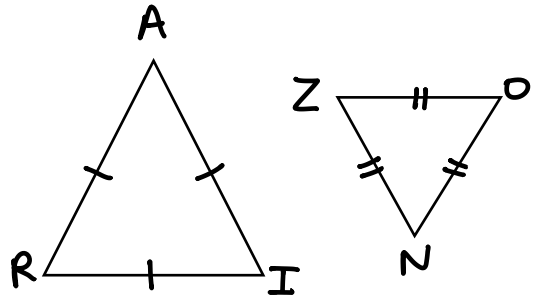
$\frac{12}{16} = \frac{3}{4}$

$\frac{15}{20} = \frac{3}{4}$

△TEX ~ △SAX

Reason: Since ∠TXE and ∠SXA are vertical ∠s, then they are ≅. Sides $\frac{TX}{SX} = \frac{3}{4}$ and $\frac{EX}{XA} = \frac{3}{4}$, thus the corresponding sides are proportional. Because ∠TXE and ∠SXA are included ∠s, the triangles are similar by SAS~.

6)

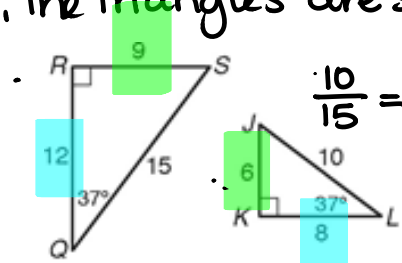


Similar: (YES) or NO

△RAI ~ △ONZ

Reason: Because both triangles are equilateral, each triangles have all of their given side lengths as the same measure. Therefore, all proportions will end up being the same ratio for all corresponding sides. Thus, the triangles are similar by SSS~.

Use the diagram to the right to answer questions 7-8.



7) Complete the similarity statement: △SRQ ~ △JKL

8) Write a proportion with all three pairs of corresponding sides.

$\frac{QR}{KL} = \frac{RS}{KJ} = \frac{SQ}{JL} = \frac{3}{2}$

$\frac{10}{15} = \frac{2}{3}$

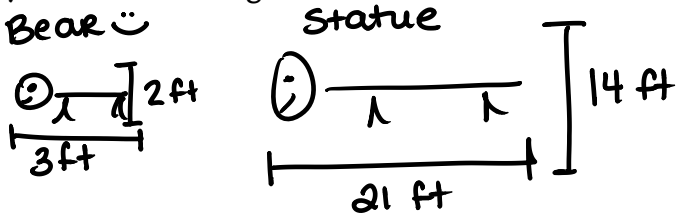
$\frac{8}{12} = \frac{2}{3}$

$\frac{6}{9} = \frac{2}{3}$

9) Mrs. Berenson wants to hang a poster in her classroom of her and her seventy cats. Her original photograph is 4 in. by 6 in. The poster will be 18 ft. by 27 ft. What is the scale factor of enlargement?

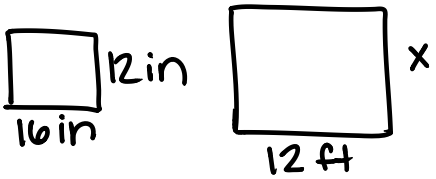
Scale factor = 4.5

10) Mrs. Klotz is having a statue made to put in front of her house of her adorable dog Bear. Bear is 3 ft. by 2 ft. She is using a scale factor of 7. What will be the dimensions of her statue of Bear?



14 ft by 21 ft

11) Ms. Fredlund would like to buy a tiger to display at her wedding reception. She needs to find the perfect size cage for this tiger. The model she has created of the cage is 12 in. by 16 in. The actual cage will be 12 ft. long. How tall will the actual cage need to be?



$\frac{12}{x} = \frac{16}{12}$

$144 = 16x$

$9 = x$

9 feet