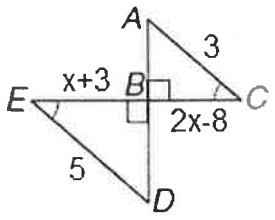
SIMILARITY QUIZ #2 REVIEW WORKSHEET

ımilar Triangles Review:

Find x and the measure of each indicated side length.

1. BC and BE



$\frac{3}{5} = \frac{2x-8}{x+3}$

$3(x+3) = 5(2x-8)$

$3x+9 = 10x-40$

$-7x = -49$

$x = 7$

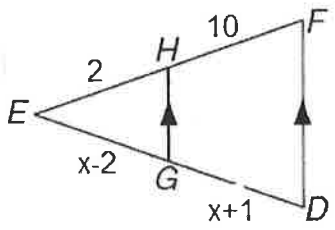
$BC = 2(7)-8 = 6$

$BE = 7+3 = 10$

BC = 6

BE = 10

2. EG and ED



$\frac{2}{10} = \frac{x-2}{x+1}$

$10x-20 = 2x+2$

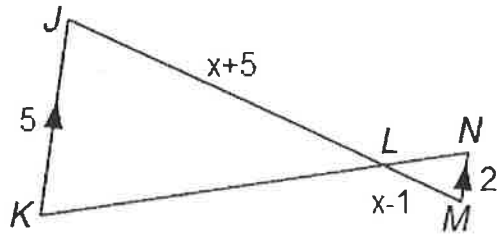
$8x = 22$

$x = 2.75$

$EG = 2.75-2 = 0.75$

$ED = 2.75+1 = 3.75$

3. JL and LM



$\frac{2}{5} = \frac{x-1}{x+5}$

$2x+10 = 5x-5$

$-3x = -15$

$x = 5$

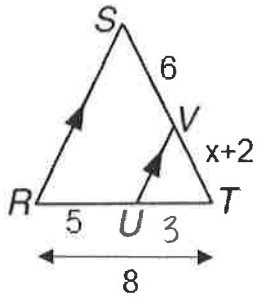
$JL = 5+5 = 10$

$LM = 5-1 = 4$

JL = 10

LM = 4

4. TV and SV



$\frac{3}{5} = \frac{x+2}{6}$

$5x+10 = 18$

$5x = 8$

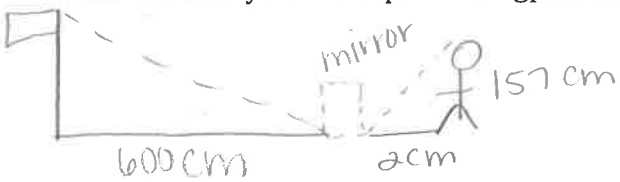
$x = 1.6$

$TV = 1.6+2 = 3.6$

SV = 6

Applications of Similar Triangles Review:

5. Sandy is trying to measure the height of a nearby flagpole using a mirror as shown in the diagram. The mirror is 600 cm away from the flagpole and 2 cm away from Sandy. The height to her eyes is 157 centimeters, from which she can clearly see the top of the flagpole. How many centimeters tall is the flagpole?

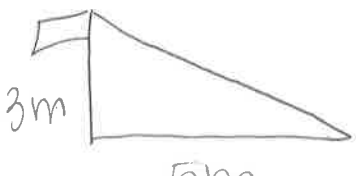


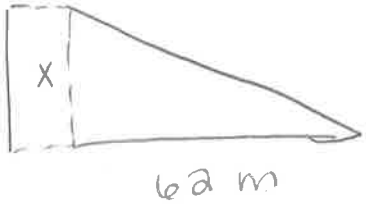
$\frac{157}{x} = \frac{2}{600}$

$2x = 94{,}200$

$x = 47{,}100$ cm

6. A flagpole 3 meters tall casts a shadow 5 meters long at the same time that a building nearby casts a shadow 62 meters long. How tall is the building?





$\frac{3}{5} = \frac{x}{62}$

$5x = 186$

$x = 37.2$ m

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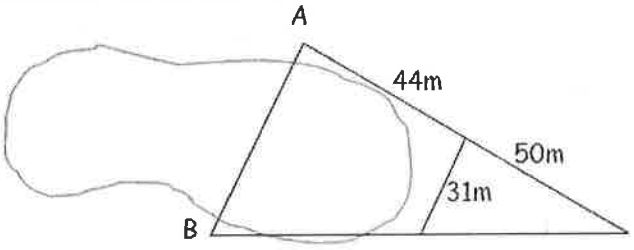
7. On a sunny day, Bill wants to find the height of a tree. He walks 25 feet along the shadow that the tree casts until his shadow ends at the same points as the tree's shadow. Bill is six feet tall and the length of his shadow is 9 feet. How many inches tall is the tree?

$\frac{x}{6} = \frac{9}{34}$

$34x = 54$

$x = 1.59$ ft $\approx$ 19.08 in

8. Calculate the distance across the lake.



$\frac{50}{94} = \frac{31}{x}$

$50x = 2914$

$x =$ 58.28m

9. Peter takes a picture of Wendy during a vacation to Neverland. Wendy is 158 cm tall and is 240 cm away from the camera lens. The film is 4 cm from the lens. How tall is her image on the film to the nearest tenth of a centimeter?

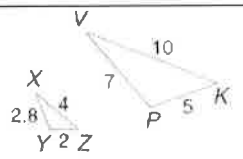
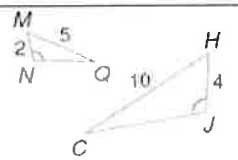
$\frac{158}{x} = \frac{240}{4}$

$240x = 632$

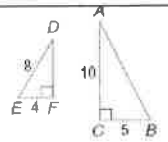
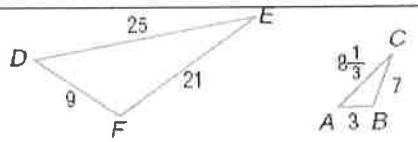
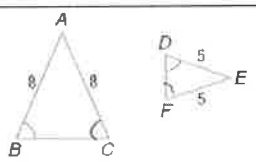
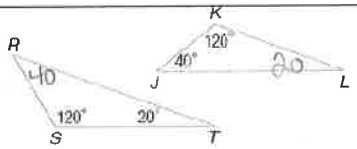
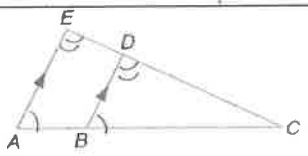
$x =$ 2.6 cm

Proving Triangle Similarity Review:

Determine whether each pair of triangles are similar (AA, SAS, or SSS). Justify your solution.

		AA, SAS, SSS, or Not Similar	Justification
10.		$\frac{2.8}{7} = \frac{4}{10} = \frac{2}{5}$	SSS
11.		not Similar	congruent angle not the included angle

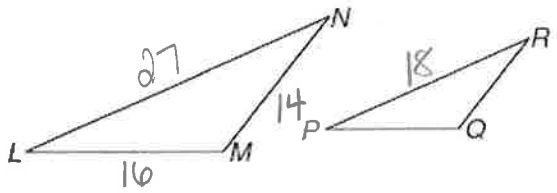
SIMILARITY QUIZ #2 REVIEW WORKSHEET

12.		not similar	angle not included for both △s
13.		SSS	$\frac{3}{9} = \frac{7}{21} = \frac{8\frac{1}{3}}{25}$ S.f. = 1/3
14.		AA	isosceles △s have ≅ base ∠'s
15.		AA	missing ∠'s are equivalent to given
16.		AA	corresponding angles created by parallel lines

Special Segments in Similar Triangles Review:

Find the perimeter of each triangle.

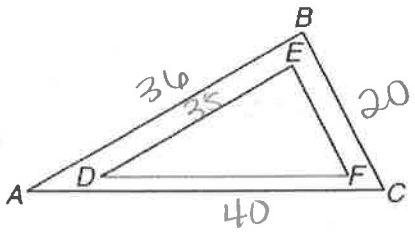
17. ΔPQR if LM = 16, MN = 14, NL = 27, and RP = 18.



$\frac{18}{27} = \frac{2}{3}$

$\frac{2}{3} = \frac{P}{57}$ $3P = 114$ $P = 38$

18. ΔDEF if AB = 36, BC = 20, CA = 40, and DE = 35.



$\frac{35}{36} = \frac{P}{96}$

$36P = 3360$ $P = 93.3$

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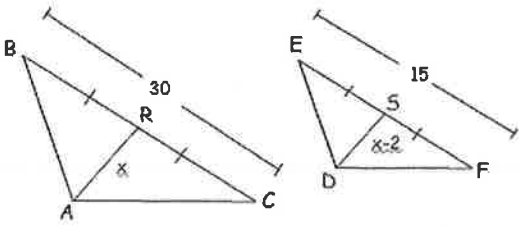
Each pair of triangles is similar. Find x.

19.



$\frac{x-2}{x} = \frac{15}{30}$

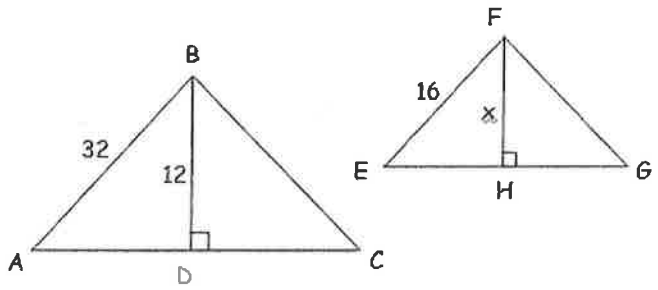
$\frac{x-2}{x} = \frac{1}{2}$

$x = 2x - 4$

$-x = -4$

$x = 4$

20.



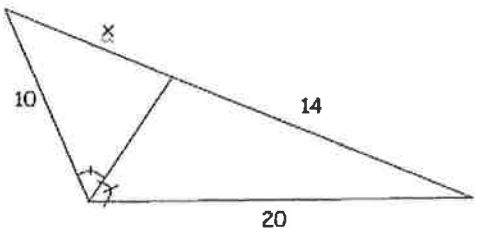
$\frac{16}{32} = \frac{1}{2}$

$\frac{1}{2} = \frac{x}{12}$

$2x = 12$

$x = 6$

21.

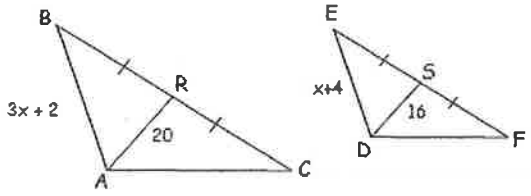


$\frac{10}{x} = \frac{20}{14}$

$20x = 140$

$x = 7$

22.



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

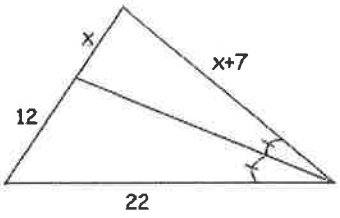
$\frac{4}{5} = \frac{x+4}{3x+2}$

$12x + 8 = 5x + 20$

$7x = 12$

$x = 12/7$

23.



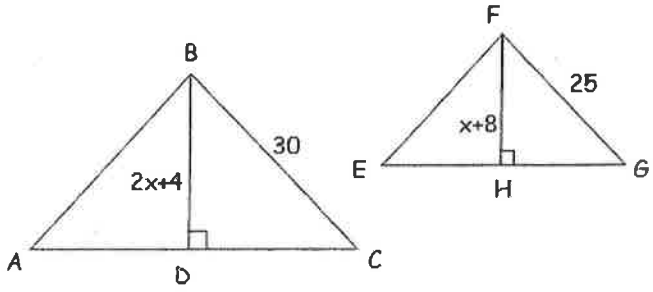
$\frac{22}{12} = \frac{x+7}{x}$

$22x = 12x + 84$

$10x = 84$

$x = 8.4$

24.



$\frac{25}{30} = \frac{x+8}{2x+4}$

$\frac{5}{6} = \frac{x+8}{2x+4}$

$10x + 20 = 6x + 48$

$4x = 28$

$x = 7$