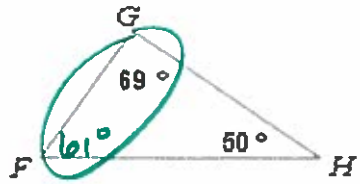
Standard G.SRT.3, G.SRT.4, G.SRT5

Name: Key
Date: _____ P: _____

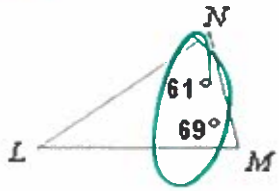
Geometry 1-2– **Similarity Assessment Review**

Level 1:

1. Determine if the following triangles are similar.



$69 + 50 = 119$
$180 - 119 = 61°$



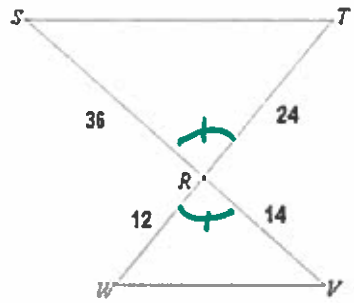
Similar: Yes or No

Postulate or Theorem: AA

Scale Factor: NOT POSSIBLE (NO SIDE LENGTHS GIVEN)

Similarity Statement: $\triangle FGH \sim \triangle NML$
61° 69° 50° 61° 69° 50°

2. Determine if the following triangles are similar.



$\triangle SRT \cong \triangle VRW$

$\frac{36}{14} \stackrel{?}{=} \frac{24}{12} \rightarrow \frac{18}{7} \neq \frac{2}{1}$

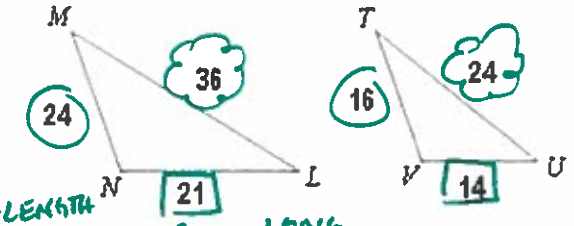
Similar: Yes or No

Postulate or Theorem: X

Scale Factor: X

Similarity Statement: X

3. Determine if the following triangles are similar.



MID-LENGTH SHORT LONG

$\frac{24}{14} = \frac{21}{14} = \frac{36}{24}$

$\div 8 / 16$ $\div 7$ $\div 12$

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

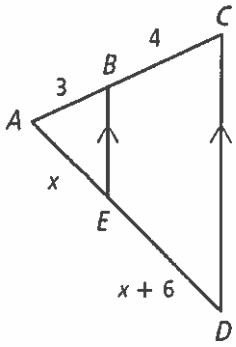
Similar: Yes or No

Postulate or Theorem: SSS

Scale Factor: $\frac{3}{2}$

Similarity Statement: $\triangle MNL \sim \triangle TVU$

4. Solve for x.



$\frac{3}{x} = \frac{4}{x+6}$

$3(x+6) = 4x$

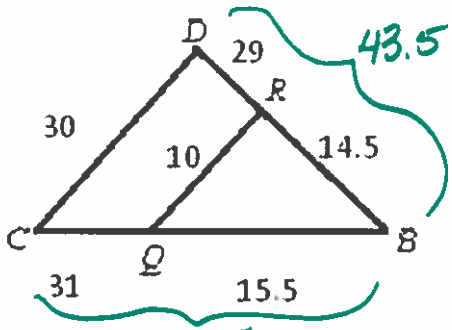
$3x + 18 = 4x$
$-3x \quad -3x$

$18 = x$

x = 18

Level 2:

5. Determine if the following triangles are similar.



$\frac{30}{10} \overset{?}{=} \frac{43.5}{14.5} \overset{?}{=} \frac{46.5}{15.5}$

$\frac{3}{1} = \frac{3}{1} = \frac{3}{1}$ ✓

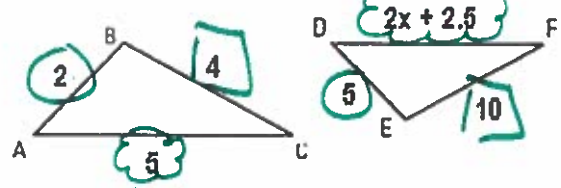
Similar: Yes or No

Postulate or Theorem: SSS

Scale Factor: $\frac{3}{1}$

Similarity Statement: $\triangle BCD \sim \triangle BQR$

6. Find the value of x that makes $\triangle ABC \sim \triangle DEF$.



$\frac{2}{5} \overset{?}{=} \frac{4}{10}$ ✓

$\frac{2}{5} = \frac{5}{2x+2.5}$

$2(2x+2.5) = 25$

$4x + 5 = 25$

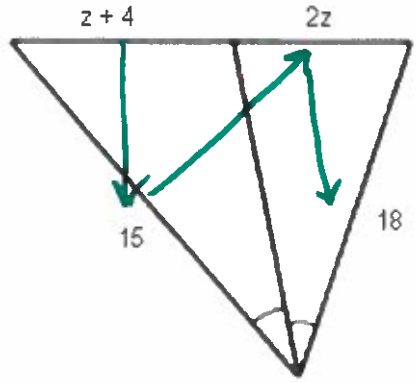
$-5 \quad -5$

$\frac{4x}{4} = \frac{20}{4}$

$x = 5$

x = 5

7. Solve for z.



$\frac{z+4}{15} = \frac{2z}{18}$

$18(z+4) = 30z$

$18z + 72 = 30z$

$-18z \quad -18z$

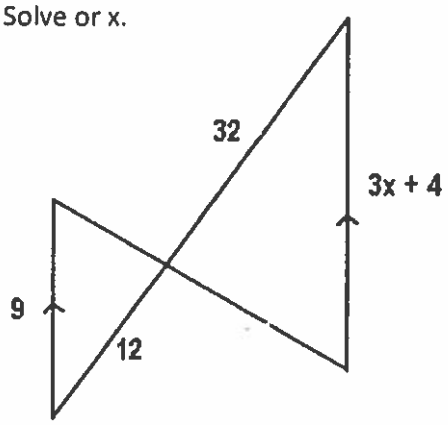
$\frac{72}{12} = \frac{12z}{12}$

$6 = z$

z= 6

Level 3:

7. Solve or x.



$$\frac{9}{3x+4} = \frac{\cancel{12}\ 3}{\cancel{32}\ 8}$$

$$3(3x+4) = 72$$

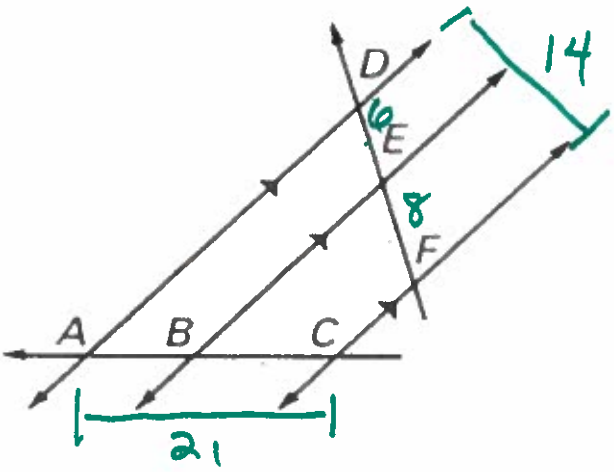
$$9x + \cancel{12} = 72$$
$$\underline{\ \ -\cancel{12} \quad -12\ \ }$$

$$9x = 60$$

$$x = \frac{60}{9} = \frac{20}{3}$$

x = $\frac{20}{3}$ OR $6\frac{2}{3}$ OR $6.6\overline{6}$

8. AC = 21, EF = 8, and DE = 6. What is the length of AB?



$$\frac{AB}{21} = \frac{\cancel{6}\ 3}{\cancel{14}\ 7}$$

×3

×3

AB = 9

OR

$$\frac{AB}{21} = \frac{\cancel{6}\ 3}{\cancel{14}\ 7}$$

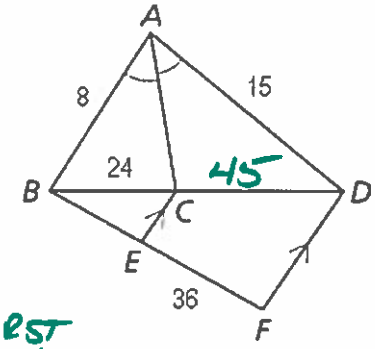
$$\frac{7AB}{7} = \frac{63}{7}$$

AB = 9

AB = 9

Level 4:

10. Find BE.



FIND CD FIRST

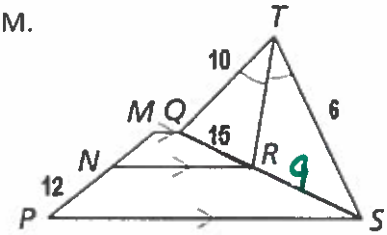
$\frac{1\ \cancel{8}}{3\ \cancel{24}} = \frac{15}{CD}$ $CD = 45$

NOW: $\frac{24}{BE} = \frac{\cancel{45}\ 5}{\cancel{36}\ 4}$

$5BE = 96 \rightarrow BE = 19.2$

BE = 19.2

11. Find NM.

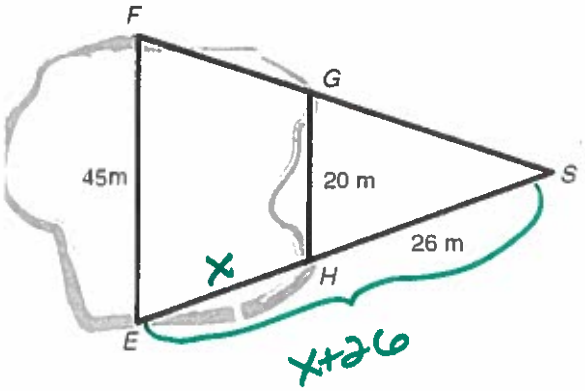


FIND RS: $\frac{\cancel{10}\ 2}{\cancel{15}\ 3} = \frac{6}{RS}$ $2RS = 18$ $RS = 9$

$\frac{MN}{15} = \frac{\cancel{12}\ 4}{\cancel{9}\ 3}$ $3MN = 60$ $MN = 20$

NM = 20

12. Use the diagram below to calculate the distance across the lake to get from point E to point H. The triangles are similar.



$\frac{9\ \cancel{45}}{4\ \cancel{20}} = \frac{x+26}{26}$

$4(x+26) = 234$

$4x + 104 = 234$

$-104 \quad -104$

$\frac{4x}{4} = \frac{130}{4}$

$x = 32.5m$

EH = 32.5m