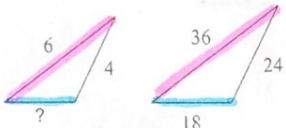


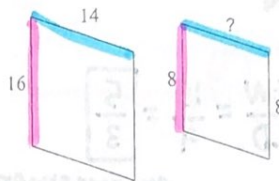
3.4 - Quiz Review

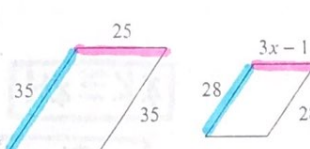
The polygons in each pair are similar. Find the missing side length.

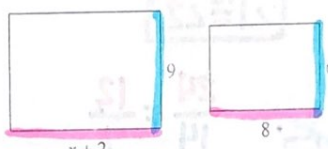
1)   $\frac{6}{x} = \frac{36}{18}$   
 $\frac{36}{36}x = \frac{108}{36}$   
 $x = 3$

\*You could have picked either side (4+24) would give you the same answer.

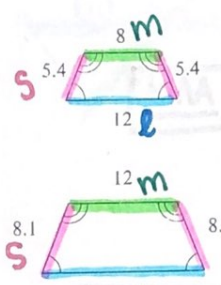
Solve for x. The polygons in each pair are similar.

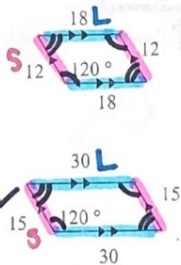
2)   $\frac{16}{14} = \frac{8}{x}$   
 $\frac{112}{16} = \frac{16x}{16}$   
 $x = 7$

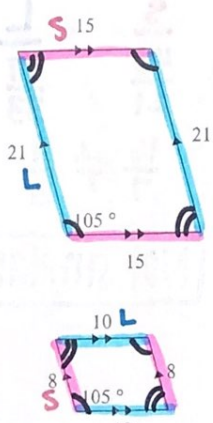
3)   $\frac{25}{35} = \frac{3x-1}{28}$   
 $105x - 35 = 700$   
 $+35 +35$   
 $105x = 735$   
 $\frac{105x}{105} = \frac{735}{105}$   
 $x = 7$

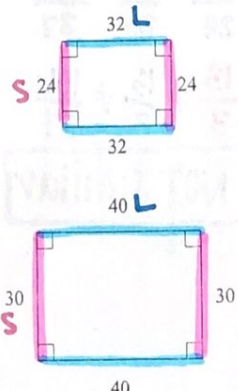
4)   $\frac{x+2}{9} = \frac{8}{6}$   
 $72 = 6x + 12$   
 $-12 -12$   
 $\frac{60}{6} = \frac{6x}{6}$   
 $x = 10$

Determine if the polygons are similar. SHOW YOUR WORK!

5)   $\frac{S}{5.4} = \frac{M}{8} = \frac{L}{12}$   
 $\frac{5.4}{8.1} = \frac{12}{18} = \frac{12}{18}$   
 $\frac{2}{3} = \frac{2}{3} = \frac{2}{3}$   
 Sides are proportional ✓  
 ∠s are ≅ ✓  
**So, polygons are similar**

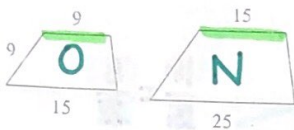
6)  ∠s are ≅ ✓  
 $\frac{S}{12} = \frac{L}{18}$   
 $\frac{12}{15} \neq \frac{18}{30}$   
 Sides are NOT prop. ✗  
**polygons are NOT similar**

7)   $\frac{S}{15} = \frac{L}{21}$   
 $\frac{15}{8} \neq \frac{21}{10}$   
**NOT similar**

8)   $\frac{S}{24} = \frac{L}{32}$   
 $\frac{24}{30} = \frac{32}{40}$   
 $\frac{4}{5} = \frac{4}{5}$   
 Sides are prop. ✓  
 ∠s are ≅ ✓  
**Similar**

The polygons in each pair are similar. Find the scale factor of the smaller figure to the larger figure.

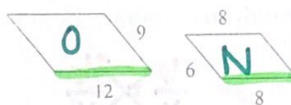
9)



$$\text{Scale factor} = \frac{\text{NEW}}{\text{OLD}} = \frac{15}{9} = \boxed{\frac{5}{3}}$$

enlargement

10)

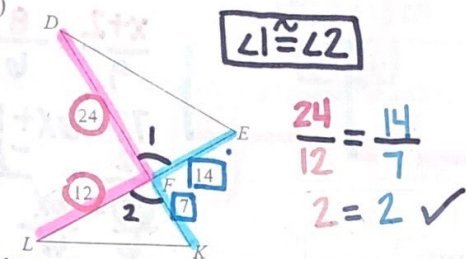


$$\frac{8}{12} = \boxed{\frac{2}{3}}$$

reduction

State if the triangles in each pair are similar. If so, state how you know they are similar and complete the similarity statement.

11)



$$\angle 1 \cong \angle 2$$

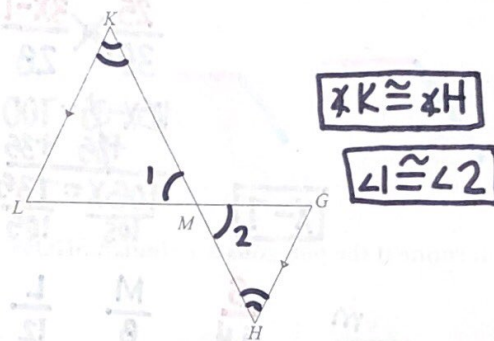
$$\frac{24}{12} = \frac{14}{7}$$

$$2 = 2 \checkmark$$

$\triangle FED \sim \triangle FKL$  by SAS

$\checkmark \angle 1 \cong \angle 2$   
 $\checkmark 2$  sides prop.

12)

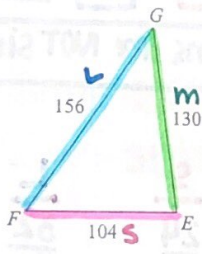


$$\angle K \cong \angle H$$

$$\angle 1 \cong \angle 2$$

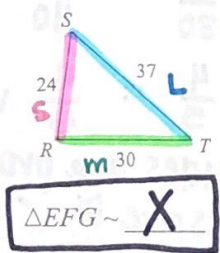
$\triangle MLK \sim \triangle MGH$  by AA

13)



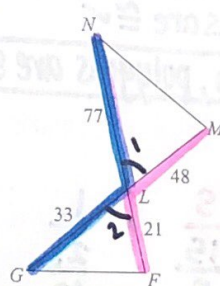
$\frac{104}{24}$	$\frac{130}{30}$	$\frac{156}{37}$
$\frac{13}{3} \neq \frac{13}{3}$	$\neq \frac{156}{37}$	

NOT similar



$\triangle EFG \sim \text{X}$

14)



$$\angle 1 \cong \angle 2$$

$\frac{48}{21}$	$\frac{77}{33}$
$\frac{16}{7} \neq \frac{7}{3}$	

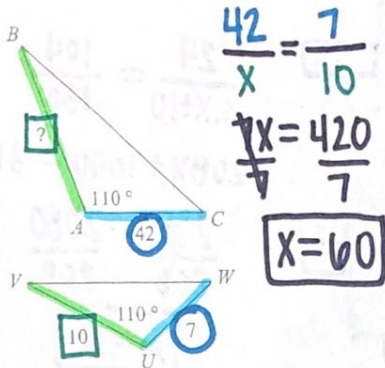
$\triangle LMN \sim \text{X}$

Not similar



Find the missing length. The triangles in each pair are similar.

15)  $\triangle ABC \sim \triangle UVW$

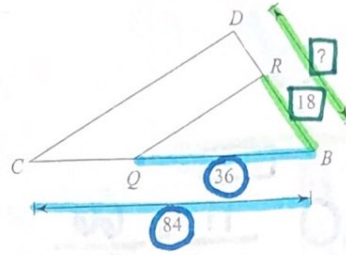


$$\frac{42}{x} = \frac{7}{10}$$

$$420 = 7x$$

$$x = 60$$

16)

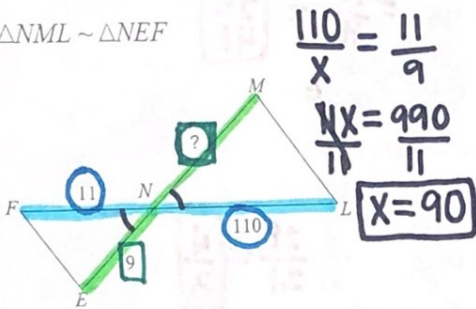


$$\frac{36}{18} = \frac{84}{x}$$

$$1512 = 36x$$

$$x = 42$$

17)  $\triangle NML \sim \triangle NEF$

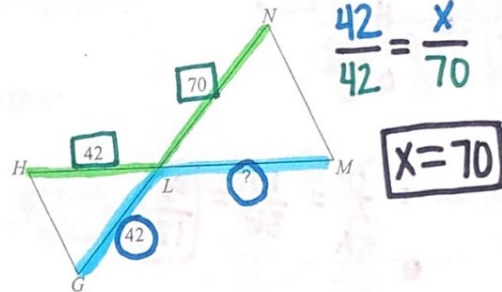


$$\frac{110}{x} = \frac{11}{9}$$

$$990 = 11x$$

$$x = 90$$

18)  $\triangle LMN \sim \triangle LGH$

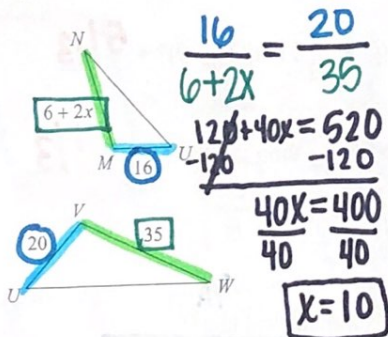


$$\frac{42}{42} = \frac{x}{70}$$

$$x = 70$$

Solve for  $x$ . The triangles in each pair are similar.

19)  $\triangle UVW \sim \triangle MNV$



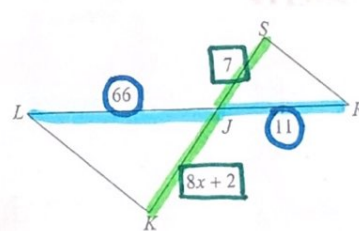
$$\frac{16}{6+2x} = \frac{20}{35}$$

$$120 + 40x = 520$$

$$40x = 400$$

$$x = 10$$

20)  $\triangle JKL \sim \triangle JSR$



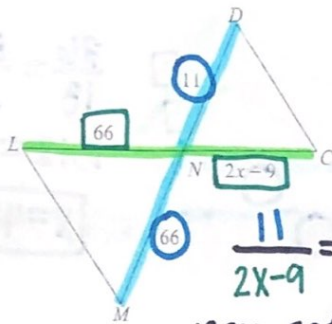
$$\frac{66}{8x+2} = \frac{11}{7}$$

$$88x + 22 = 462$$

$$88x = 440$$

$$x = 5$$

21)  $\triangle NML \sim \triangle NDC$



$$\frac{11}{2x-9} = \frac{66}{66}$$

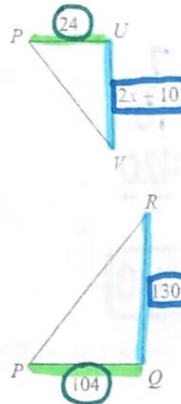
$$132x - 594 = 726$$

$$+594 \quad +594$$

$$\hline 132x = 1320$$

$$\boxed{x=10}$$

22)  $\triangle PQR \sim \triangle PUV$



$$\frac{24}{2x+10} = \frac{104}{130}$$

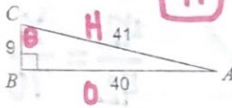
$$208x + 1040 = 3120$$

$$\frac{208x}{208} = \frac{2080}{208}$$

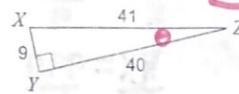
$$\boxed{x=10}$$

Find the value of each trigonometric ratio.

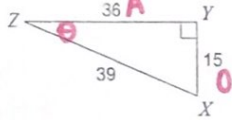
23)  $\sin C = \frac{O}{H} = \frac{40}{41}$



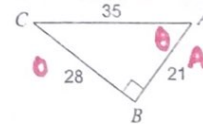
24)  $\cos Z = \frac{A}{H} = \frac{40}{41}$



25)  $\tan Z = \frac{O}{A} = \frac{15}{36} = \frac{5}{12}$



26)  $\tan A = \frac{28}{21} = \frac{4}{3}$



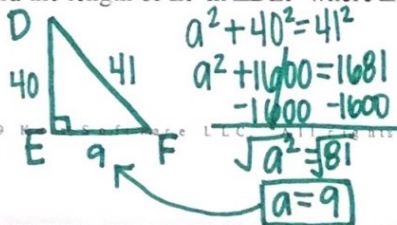
27)  $\sin(25^\circ) = \cos 65^\circ$   
 $\cos(80^\circ) = \sin 10^\circ$

28) If  $\sin \theta = \frac{2}{3}$ ,  $\cos(90 - \theta) = \frac{2}{3}$

If  $\cos \theta = \frac{5}{13}$ ,  $\sin(90 - \theta) = \frac{5}{13}$

If  $\tan \theta = \frac{3}{7}$ , then  $\tan(90 - \theta) = \frac{7}{3}$

29) Find the length of EF in  $\triangle DEF$  where  $\angle E = 90^\circ$  and  $\sin F = \frac{40}{41}$ . Then find  $\tan D$ .



$\frac{O}{H} = \frac{40}{41}$   
 $\tan D = \frac{9}{40}$