

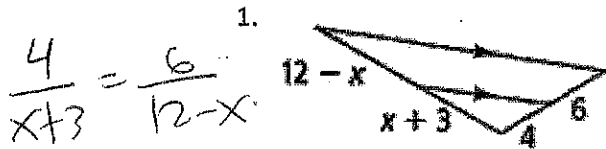
Side pieces to side pieces or whole sides to matching side pieces (no side pieces to whole bases)

15 total

Name: Key

Section 10.5 Proportions with the Side Splitter Theorem  
Worksheet

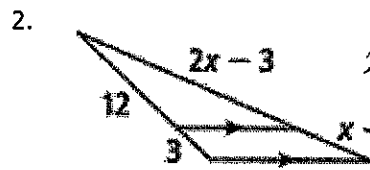
Solve for x.



$$48 - 4x = 6x + 18$$

$$30 = 10x$$

$$x = 3$$

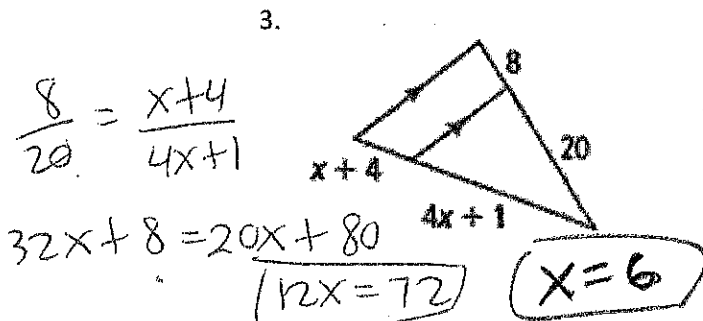


$$\frac{12}{2x-3} = \frac{3}{x-5}$$

$$12x - 60 = 6x - 9$$

$$x = 8.5$$

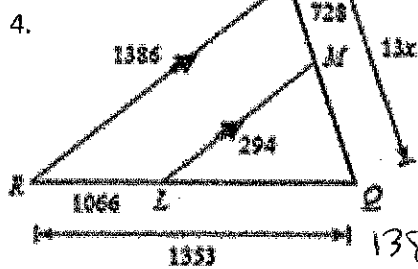
$$\frac{6x}{6} = \frac{51}{6}$$



$$32x + 8 = 20x + 80$$

$$12x = 72$$

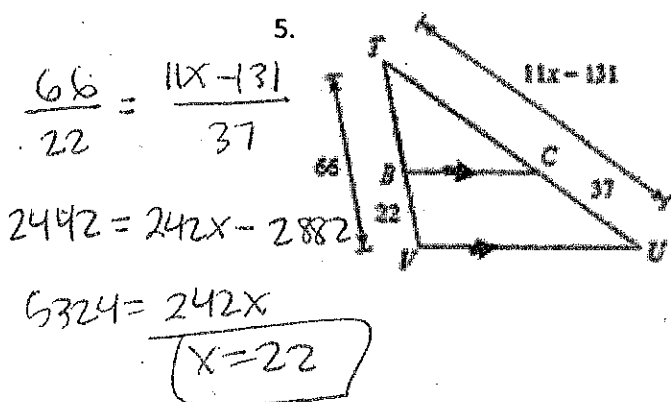
$$x = 6$$



$$\frac{13x+300}{1353} = \frac{728}{1066}$$

$$13858x = 665184$$

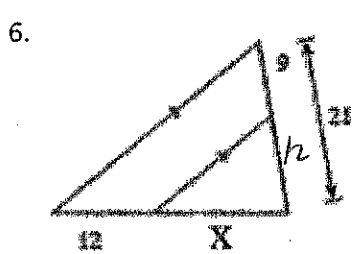
$$x = 48$$



$$2442 = 242x - 2882$$

$$5324 = 242x$$

$$x = 22$$



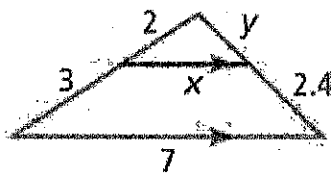
$$\frac{12}{9} = \frac{x}{21}$$

$$\frac{144}{9} = \frac{9x}{9}$$

$$x = 16$$

7. A classmate says you can use the Side-Splitter Theorem to find both x and y in the diagram. Explain what is wrong with your classmate's statement.

The side splitter theorem will only work when solving for y



$$\triangle ABC \sim \triangle DFE$$

8. Similarity statement:  $\triangle ABC \sim \triangle DFE$

Find  $x$ : 10

Find  $\overline{AB}$ : 10

Find  $\overline{DF}$ : 6

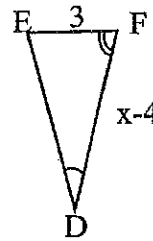
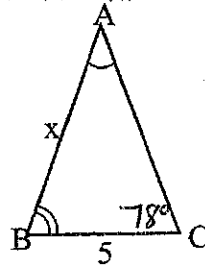
Find  $m\angle E$ :  $78^\circ$

$$\frac{x}{5} = \frac{x-4}{3}$$

$$-2x = -20$$

$$3x = 5x - 20$$

$$x = 10$$

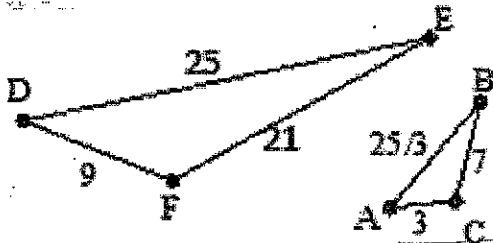


Determine if each pairs of triangles are similar.

If Similar (a) Write the similarity postulate that supports it; (b) Write a similarity statement.

If not Similar (a) Write no; (b) Justify why they are not similar.

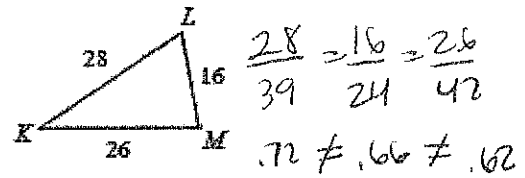
9.



$$\frac{25}{25/3} = \frac{21}{7} = \frac{9}{3} = 3$$

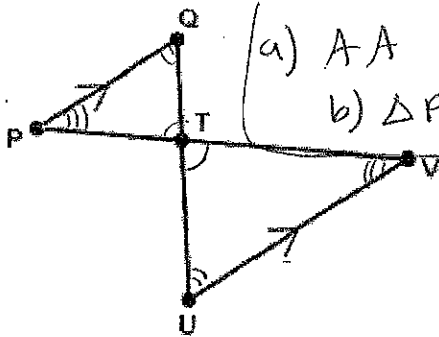
a) yes by SSS  
b)  $\triangle DEF \sim \triangle ABC$

10.



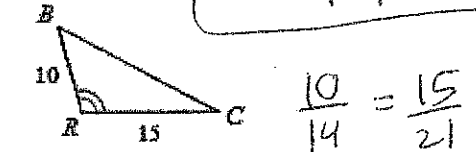
a) not similar  
b) sides are not proportional

11.



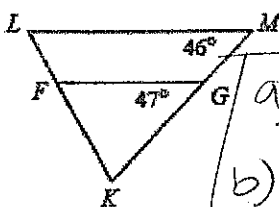
a) AA  
b)  $\triangle PQT \sim \triangle VUT$

12.



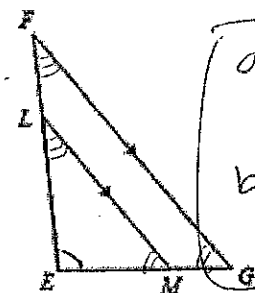
a) SAS  
b)  $\triangle RST \sim \triangle RBT$

13.

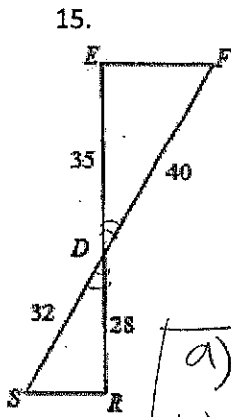


a) not similar  
b)  $\angle$ 's are not  $\cong$

14.



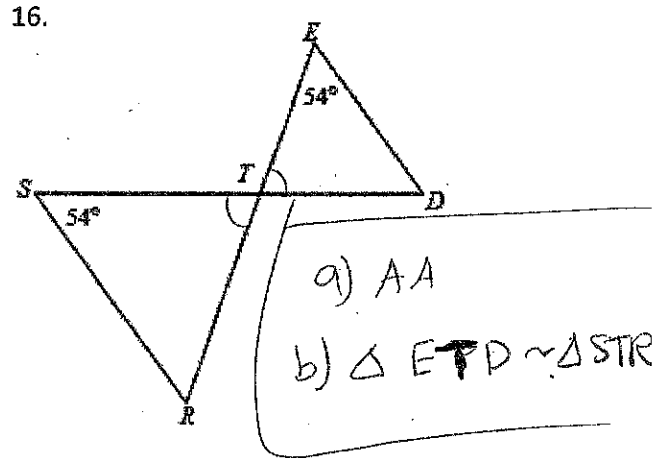
a) AA  
b)  $\triangle FEG \sim \triangle LEM$



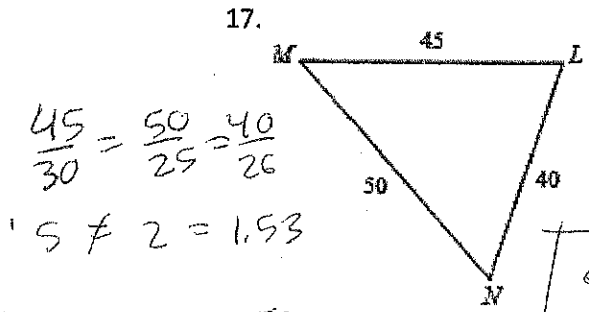
$$\frac{28}{35} = \frac{32}{40}$$

$$.8 = .8$$

a) SAS  
b)  $\triangle EDF \sim \triangle RDS$



a) AA  
b)  $\triangle ETD \sim \triangle STR$



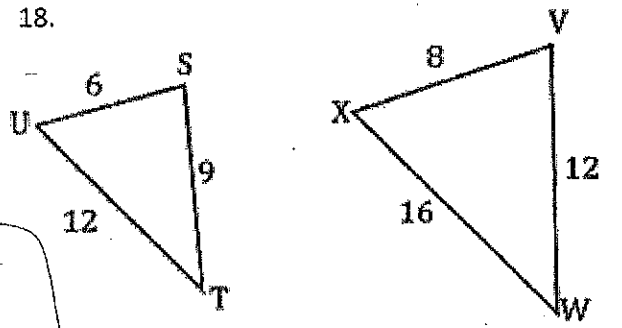
$$\frac{45}{30} = \frac{50}{25} = \frac{40}{26}$$

$$1.5 \neq 2 = 1.53$$

$$\frac{45}{25} \neq \frac{40}{26} \neq \frac{50}{30}$$

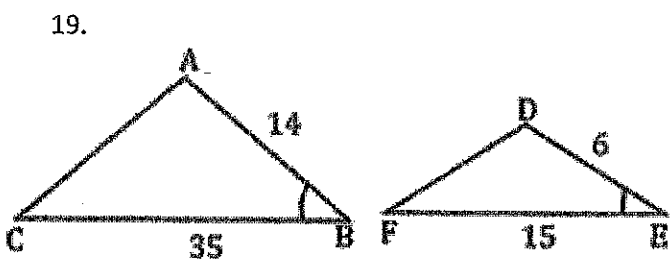
$$\frac{45}{26} \neq \frac{40}{30}$$

a) not similar  
b) sides are not proportional



$$\frac{8}{6} = \frac{12}{9} = \frac{16}{12} = \frac{4}{3}$$

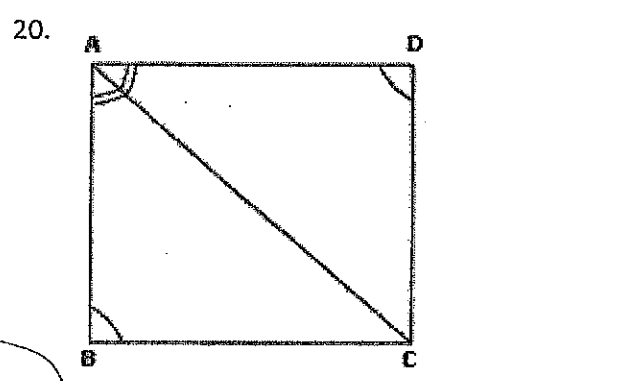
a) SSS  
b)  $\triangle UST \sim \triangle XVW$



$$\frac{14}{6} = \frac{35}{15}$$

$$\frac{7}{3} = \frac{7}{3}$$

a) SAS  
b)  $\triangle CAB \sim \triangle FDE$



a) AA  
b)  $\triangle ACB \sim \triangle ACD$

