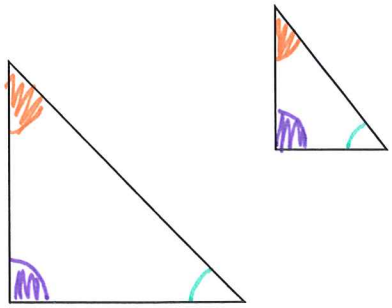
Name Key

AA Similarity

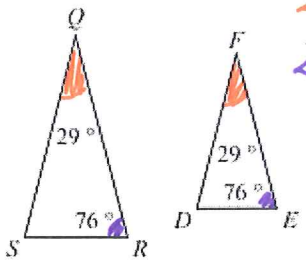
If the two angles of one triangle are congruent to two angles of another triangle, then the triangles are similar.



The 2 pairs of ≅ angles preserve the shape of the Δ. So similar Δs have the same shape but can be diff. in size.

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

1.

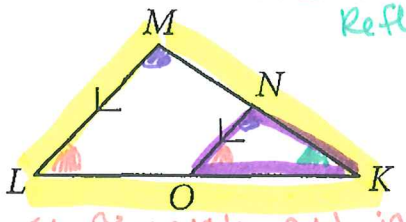


∠Q ≅ ∠F
∠R ≅ ∠E

The Δs are Similar by AA Similarity

ΔQRS ~ ΔFED by AA similarity

2.



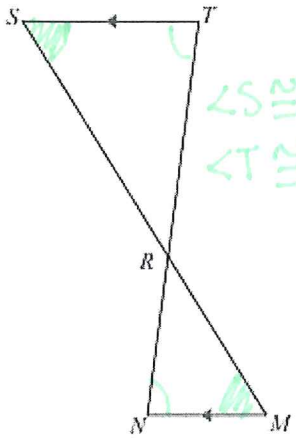
∠K ≅ ∠K Reflexive

∠L ≅ ∠NOK alt. int ∠s are ≅

∠M ≅ ∠ONK alt. int. ∠s are ≅

So ΔLMK ~ ΔONK by AA sim

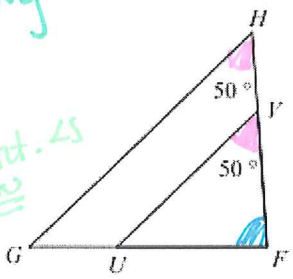
3.



∠S ≅ ∠M, ∠T ≅ ∠T } alt. int. ∠s are ≅

ΔRST ~ ΔRMN by AA sim

4.

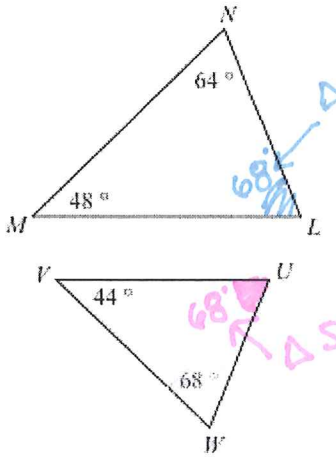


ΔFGH ~ ΔFUV by AA Sim.

∠F ≅ ∠F Reflexive

∠H ≅ ∠UVF

5.



Δ sum

Δ sum

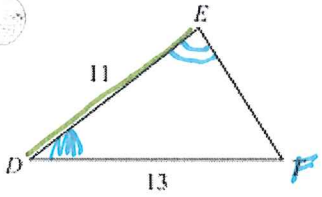
ΔNML ~ _____

∠M ≠ ∠V so The Δs are Not similar.

Practice Examples: Identify the Similar triangles, how you know they are similar, find the variable(s) or ? and the measures of the indicated sides.

6. Find SR.

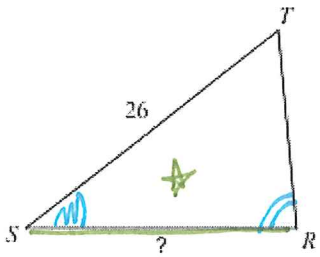
Similarity Statement: $\Delta DEF \sim \Delta SRT$



$\frac{?}{11} = \frac{26}{13}$

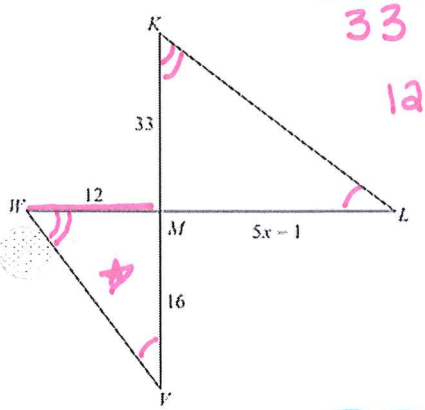
? = 22

SR= 22



7. Find ML.

Similarity Statement: $\Delta WMV \sim \Delta KML$



$\frac{12}{33} = \frac{16}{5x-1}$

$12(5x-1) = 33 \cdot 16$

$60x - 12 = 528$

$60x = 540$

$x = 9$

x = 9

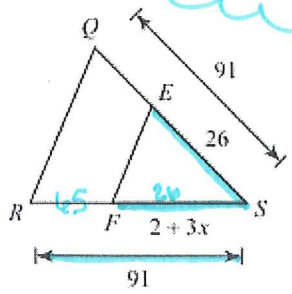
ML= 44

$ML = 5(9) - 1$

8. Find FS.

Must use full Δ sides

Similarity Statement: $\Delta FES \sim \Delta RQS$



$\frac{2+3x}{91} = \frac{26}{91}$

$91(2+3x) = 91 \cdot 26$

$182 + 273x = 2366$

$273x = 2184$

$x = 8$

? = 8

FS = 2 + 3(8)

SR= 26

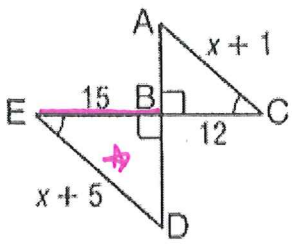
RF = 65

RF + FS = RS

RF + 26 = 91

9. Find AC and ED.

Similarity Statement: $\Delta ABC \sim \Delta DBE$



$\frac{x+5}{x+1} = \frac{15}{12}$

$12(x+5) = 15(x+1)$

$12x + 60 = 15x + 15$

$60 = 3x + 15$

$45 = 3x$

$15 = x$

x = 15

AC SR= 16

ED = 20