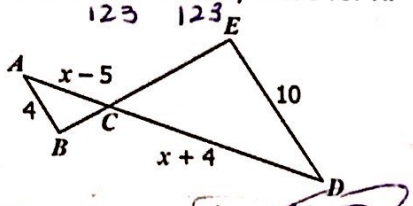
Name: _____ **Geometry**

Date: _____ **Period:** _____ **Chapter 7:** Similar Figures

7.2-7.3 Review

Directions: Given the following similar figures, solve for the indicated missing measure.

1. If $\Delta ABC \sim \Delta DEC$, solve for x.



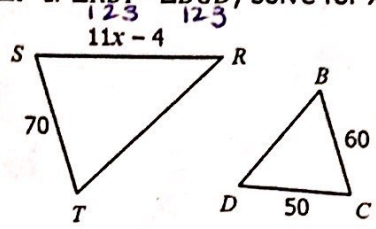
$\frac{AB}{DE} = \frac{AC}{DC}$ $\frac{4}{10} = \frac{x-5}{x+4}$

$10(x-5) = 4(x+4)$

$10x - 50 = 4x + 16$

$6x = 66$ $\boxed{x = 11}$

2. If $\Delta RST \sim \Delta BCD$, solve for x.



$\frac{SR}{CB} = \frac{ST}{CD}$

$\frac{11x-4}{60} = \frac{70}{50}$

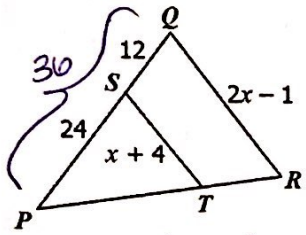
$4200 = 50(11x-4)$

$4200 = 550x - 200$

$4400 = 550x$

$\boxed{8 = x}$

3. If $\Delta PQR \sim \Delta PST$, solve for x.



$\frac{QR}{ST} = \frac{PQ}{PS}$ $\frac{2x-1}{x+4} = \frac{36}{24}$

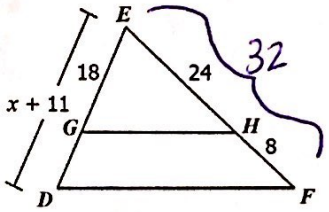
$36(x+4) = 24(2x-1)$

$36x + 144 = 48x - 24$

$168 = 12x$

$\boxed{14 = x}$

4. If $\Delta DEF \sim \Delta GEH$, solve for x.



$\frac{GE}{DE} = \frac{EH}{EF}$ $\frac{18}{x+11} = \frac{24}{32}$

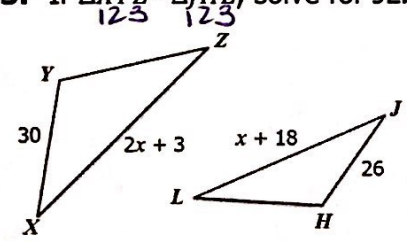
$24(x+11) = 18(32)$

$24x + 264 = 576$

$24x = 312$

$\boxed{x = 13}$

5. If $\Delta XYZ \sim \Delta JHL$, solve for JL.



$\frac{XY}{JH} = \frac{XZ}{JL}$ $\frac{30}{26} = \frac{2x+3}{x+18}$

$30(x+18) = 26(2x+3)$

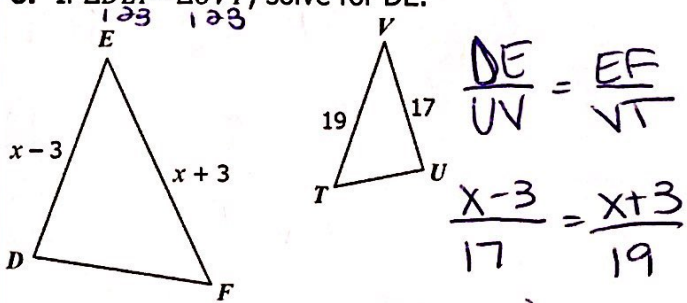
$30x + 540 = 52x + 78$

$462 = 22x$

$21 = x$

$JL = 21 + 18 = \boxed{39}$

6. If $\Delta DEF \sim \Delta UVT$, solve for DE.



$\frac{DE}{UV} = \frac{EF}{VT}$ $\frac{x-3}{17} = \frac{x+3}{19}$

$17(x+3) = 19(x-3)$

$17x + 51 = 19x - 57$

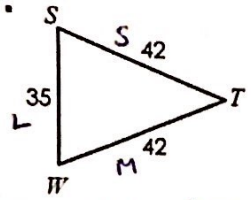
$108 = 2x$

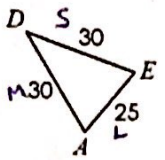
$54 = x$

$DE = 54 - 3 = \boxed{51}$

Directions: Determine whether the triangles are similar. If similar, state how (AA~, SSS~, or SAS~) and write a similarity statement.

7.



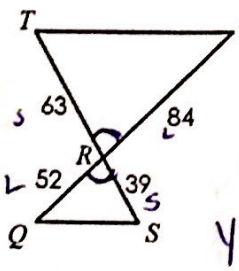


$\frac{42}{30} = \frac{42}{30} = \frac{35}{25}$

$\frac{7}{5} = \frac{7}{5} = \frac{7}{5}$ ✓

yes, $\triangle SWT \sim \triangle EAD$ by SSS~

8.

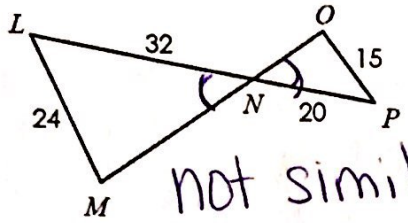


$\frac{63}{39} = \frac{84}{52}$

$\frac{21}{13} = \frac{21}{13}$ ✓

yes, $\triangle TRU \sim \triangle SRQ$

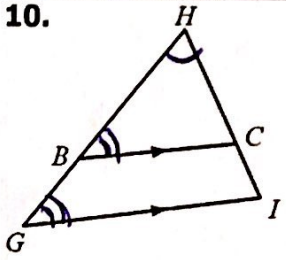
9.



not similar

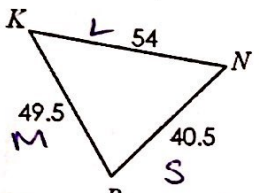
*angle is not included

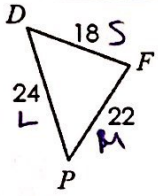
10.



yes, $\triangle HBC \sim \triangle HGI$ by AA~

11.



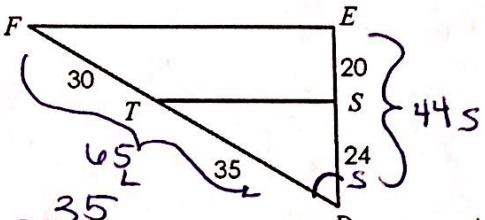


$\frac{40.5}{18} = \frac{49.5}{22} = \frac{54}{28}$

$9/4 = 9/4 \neq 27/14$

not similar

12.

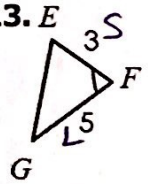


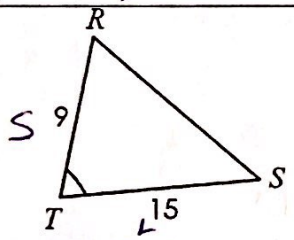
$\frac{24}{44} = \frac{35}{65}$

$\frac{6}{11} = \frac{7}{13}$ X

not similar

13.



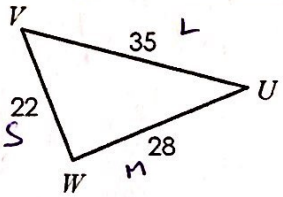


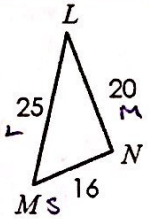
$\frac{3}{9} = \frac{5}{15}$

$\frac{1}{3} = \frac{1}{3}$ ✓

yes, $\triangle EFG \sim \triangle RTS$ by SAS~

14.



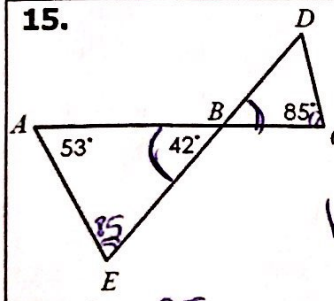


$\frac{22}{16} = \frac{28}{20} = \frac{35}{25}$

$\frac{11}{8} = \frac{7}{5} = \frac{7}{5}$ X

not similar

15.

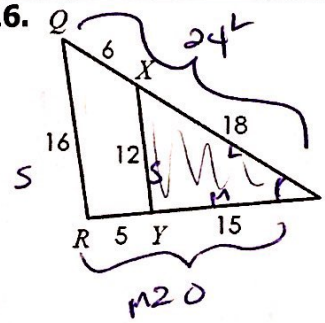


$53 + 42 = 95$

$180 - 95 = 85$

yes, $\triangle BCD \sim \triangle BEA$ by AA~

16.



$\frac{12}{16} = \frac{15}{20} = \frac{18}{24}$

$\frac{3}{4} = \frac{3}{4} = \frac{3}{4}$

yes, $\triangle QPR \sim \triangle XPY$ by SSS~ and SAS~