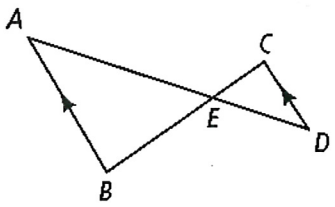
Name ANSWERS Date

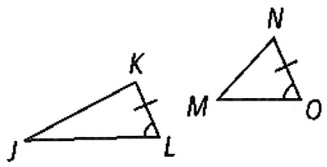
7.3 & 7.4 – Similarity by AA, SSS, & SAS

Determine whether the triangles are similar. If so, write a similarity statement and name the postulate or theorem you used.

1) 

$\triangle ABE \sim \triangle DCE$

AA

2) 

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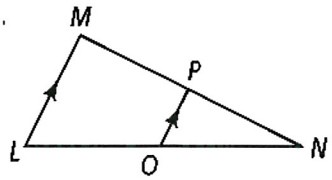
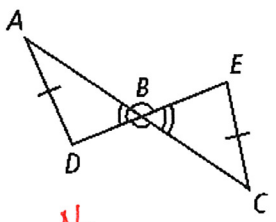
3) 

$\triangle LMN \sim \triangle OPN$

AA

4) 

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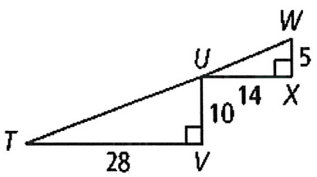
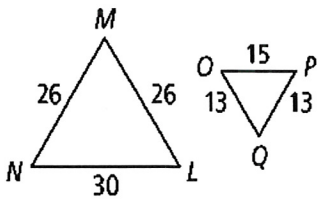
5) 

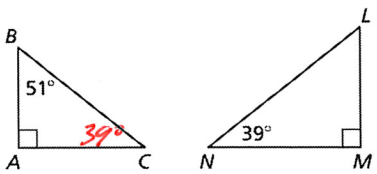
$\triangle TUV \sim \triangle UWX$

SAS

6) 

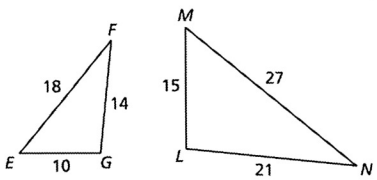
$\triangle MNL \sim \triangle QOP$

SSS

7) 

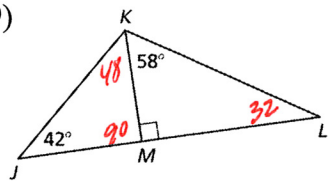
$\triangle ABC \sim \triangle MLN$

AA

8) 

$\triangle EGF \sim \triangle MLN$ $\frac{10}{15} = \frac{14}{21} = \frac{18}{27}$

SSS

9) 

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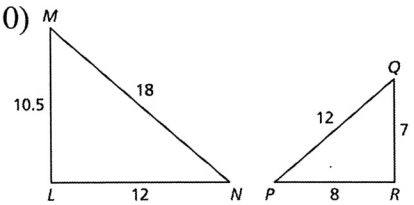
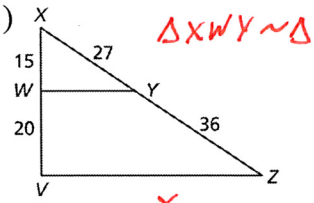
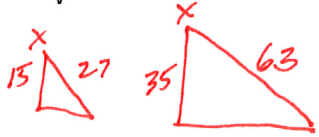
10) 

$\frac{10.5}{7} = \frac{12}{8} = \frac{18}{12}$

SSS

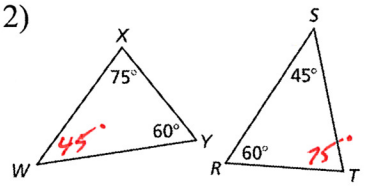
11) $\triangle XWY \sim \triangle XVZ$





$\frac{15}{35} = \frac{27}{63}$

SAS

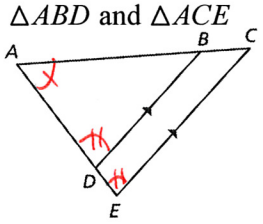
12) 

$\triangle WXY \sim \triangle SRT$

AA

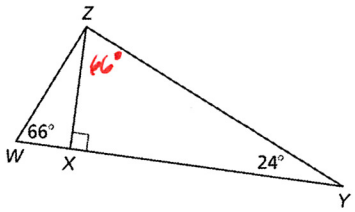
Show that the two triangles are similar by identifying the postulate or theorem that proves that they are similar, Then identify the parts that are congruent and/or proportional.

13) $\triangle ABD$ and $\triangle ACE$



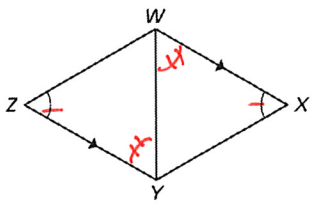
AA
$\angle A \cong \angle A$
$\angle ADB \cong \angle AEC$

14) $\triangle WXZ$ and $\triangle ZXY$



AA
$\angle W \cong \angle XZY$
$\angle WXZ \cong \angle ZXY$

15) $\triangle XWY$ and $\triangle ZYW$

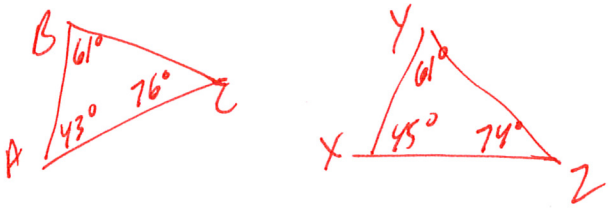


AA
$\angle Z \cong \angle X$
$\angle XWY \cong \angle ZYW$

Not a similarity statement

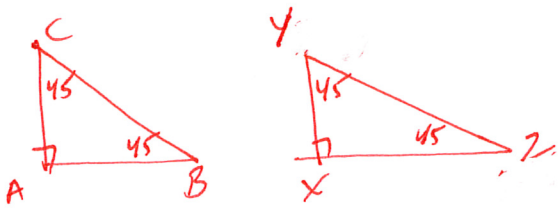
In the following, is it possible for $\triangle ABC$ and $\triangle XYZ$ to be similar? Explain your reasoning.

17) $m\angle A = 43°$, $m\angle B = 61°$, $m\angle Y = 61°$, and $m\angle Z = 74°$



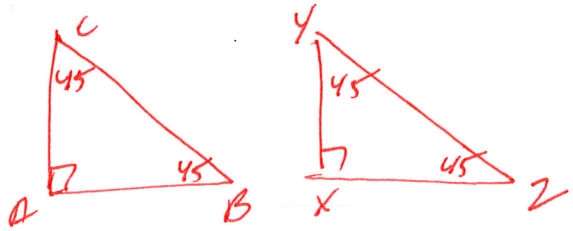
No.

18) $\angle A$ and $\angle X$ are right angles and $\angle B \cong \angle Z$.



Yes.

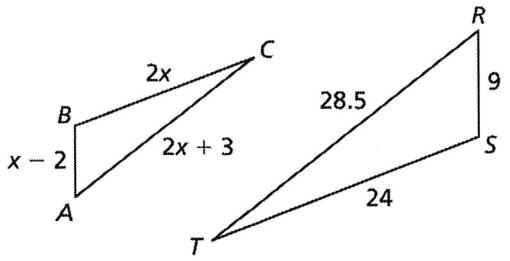
19) $\angle A$ and $\angle X$ are supplementary and $\angle B$ and $\angle Z$ are complementary.



Yes.

Find the value of x that makes $\Delta ABC \sim \Delta RST$. Show all work.

20)



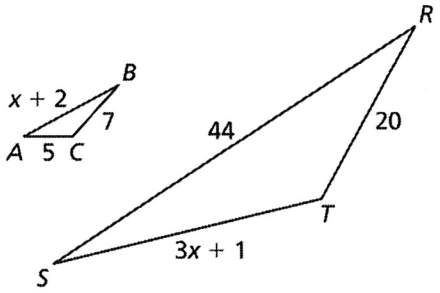
$\frac{x-2}{9} = \frac{2x}{24}$

$24x - 48 = 18x$

$6x = 48$

$\boxed{x = 8}$

21)



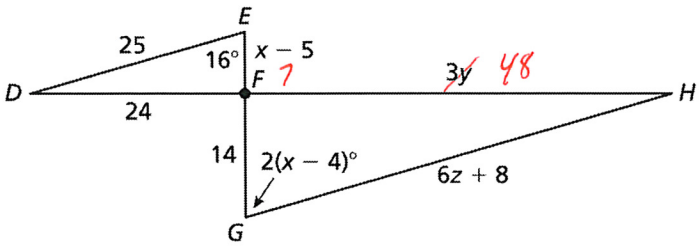
$\frac{5}{420} = \frac{x+2}{44}$

$4x + 8 = 44$

$4x = 36$

$\boxed{x = 9}$

22) Use the figure to find the values of x, y, and z that makes $\Delta DEF \sim \Delta GHF$.



$2(x-4) = 16$

$x - 4 = 8$

$\boxed{x = 12}$

$\frac{7}{14} = \frac{24}{3y}$

$3y = 48$

$\boxed{y = 16}$

$\frac{24}{48} = \frac{25}{6z+8}$

$\frac{1}{2} = \frac{25}{6z+8}$

$6z + 8 = 50$

$6z = 42$

$\boxed{z = 7}$