

Unit 8 Review: Similarity

1) Solve for x.

$$\frac{x-6}{7} = \frac{12}{x+11}$$

$$(x-6)(x+11) = 7 \cdot 12$$

$$x^2 + 5x - 66 = 84$$

$$\quad \quad -84 \quad -84$$

$$x^2 + 5x - 150 = 0$$

$$(x+15)(x-10) = 0$$

$$x+15=0$$

$$x = -15$$

$$x-10=0$$

$$x = 10$$

3) Solve for x.

$$4x^2 - 30 = x^2 + 18$$

$$-x^2 \quad -18 \quad -x^2 \quad -18$$

$$\quad +30 \quad \quad +30$$

$$\frac{3x^2}{3} = \frac{48}{3}$$

$$\sqrt{x^2} = \sqrt{16}$$

$$x = \pm 4$$

2) Solve for x.

$$\frac{x-13}{5} = \frac{12}{2x}$$

$$2x(x-13) = 60$$

$$2x^2 - 26x = 60$$

$$2x^2 - 26x - 60 = 0$$

$$2(x^2 - 13x - 30) = 0$$

$$2(x-15)(x+2) = 0$$

$$x = 15, \quad x = -2$$

4) Solve for x.

$$2(x-3)^2 - 162 = 0$$

$$2(x-3)^2 = 162$$

$$\frac{2}{2}(x-3)^2 = \frac{162}{2}$$

$$\sqrt{(x-3)^2} = \sqrt{81}$$

$$x-3 = 9$$

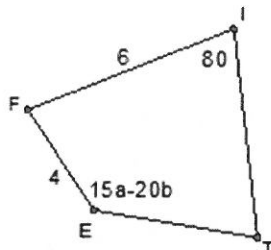
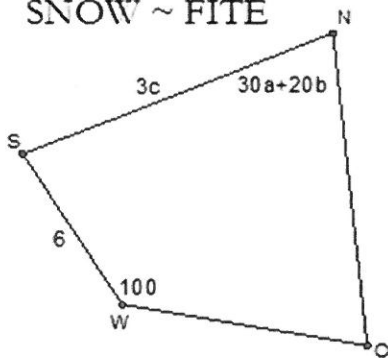
$$x = 12$$

$$x-3 = -9$$

$$x = -6$$

5) Solve for a and b.

SNOW ~ FITE



$$30a + 20b = 80$$

$$15a - 20b = 100$$

$$a = 4 \quad b = -2$$

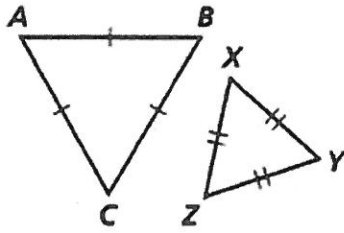
$$3c = \frac{3}{2}(6)$$

$$3c = 9$$

$$c = 3$$

For 6 – 8, decide if the triangles are similar. If so write why and give a similarity statement. If not, say why not.

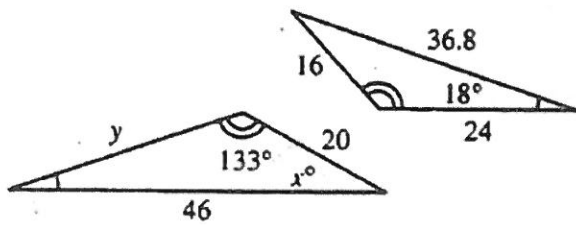
6)



$$\frac{AB}{XY} = \frac{YZ}{BC} = \frac{XZ}{AC}$$

SSS $\triangle ABC \sim \triangle XYZ$

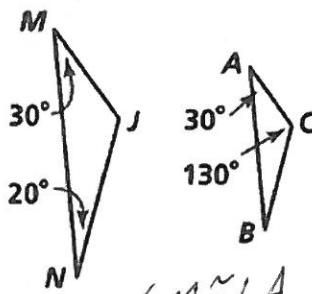
9) The two triangles are similar, solve for x and y.



$$x = 29^\circ; y = 30$$

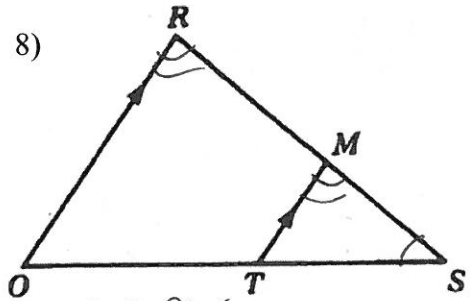
$$\frac{20}{16} = \frac{4}{24}$$

7)

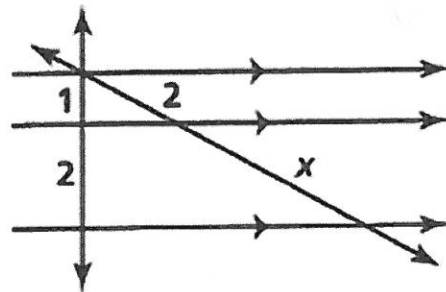


$\angle M \cong \angle A$
 $\angle J \cong \angle C$
 AA
 $\triangle MJN \sim \triangle ACB$

10) Solve for x.



$\angle S \cong \angle S$
 $\angle SMT \cong \angle SRO$
 AA
 $\triangle SMT \sim \triangle SRO$



$$\frac{1}{2} = \frac{2}{x}$$

$$x = 4$$

11) In the figure, $\overline{WX} \parallel \overline{YZ}$. Which are possible values for VX and XZ? (TEKS G.8.A)

- (A) $VX = 5$ and $XZ = 5$ $\frac{4}{6} \neq \frac{5}{5}$
- (B) $VX = 6$ and $XZ = 4$ $\frac{4}{6} \neq \frac{6}{4}$
- (C) $VX = 9$ and $XZ = 6$ $\frac{4}{6} \neq \frac{9}{6}$
- (D) $VX = 8$ and $XZ = 12$ $\frac{4}{6} = \frac{8}{12}$

