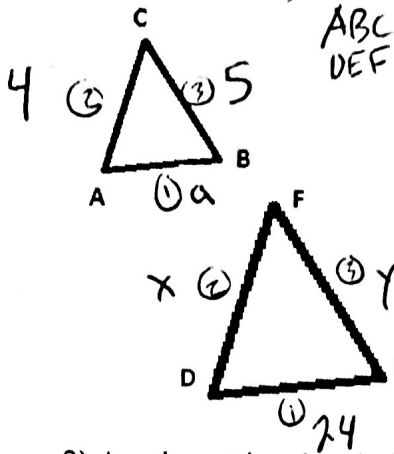


Name: _____
 Date: _____
 Class: _____

Geometry
 Unit 4
 HW 4-2

1) If 2 triangles are similar with a scale factor of $\frac{1}{4}$ find the sides of the larger triangle ($\triangle ABC \sim \triangle DEF$)

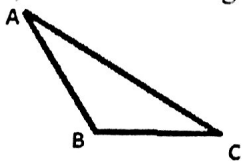


AC = 4, CB = 5, DE = 24

$$\frac{1}{4} = \frac{4}{x} \quad \frac{1}{4} = \frac{5}{y} \quad \frac{1}{4} = \frac{a}{24}$$

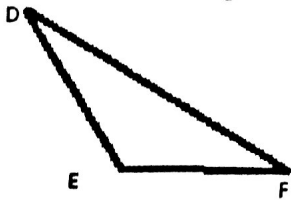
$$16 = x \quad 20 = y \quad a = 6$$

2) Are these triangles similar?



AB = 4, AC = 10, BC = 7

$$\frac{4}{14} = \frac{2}{7}$$

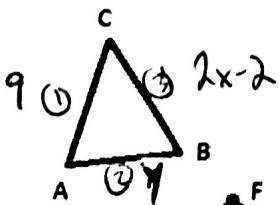


DE = 14, DF = 35, EF = 24.5

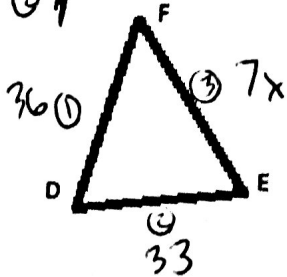
$$\frac{10}{35} = \frac{2}{7} \quad \frac{7}{24.5} = \frac{2}{7}$$

Yes by SSS

3) If these two triangles are similar find the missing sides ($\triangle ABC \sim \triangle DEF$)



AC = 9, CB = 2x - 2, DF = 36, FE = 7x, DE = 33



$$\frac{9}{36} = \frac{1}{4} \rightarrow SF$$

$$\frac{1}{4} = \frac{y}{33}$$

$$\frac{1}{4} = \frac{2x-2}{7x}$$

$$y = 8.25$$

$$7x = 8x - 8$$

$$x = 8$$

~~7(8) = 56~~ $2(8) - 2 = 14$
 $7(8) = 56$

$$\frac{2}{3} = \frac{2x+7}{4x-15}$$

$$8x - 30 = 6x + 21$$

$$2x = 51$$

$$x = 25.5$$

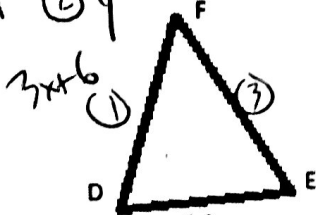
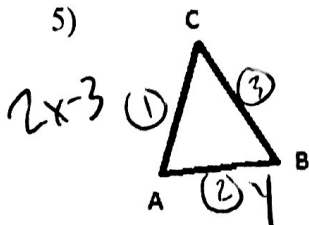
$$\frac{2(25.5)+7}{4(25.5)-15} = \frac{58}{87}$$

4) Two triangles are similar with the ratio 2:3. If the corresponding sides are represented by $2x + 7$ and $4x - 15$ find each of these sides lengths.

$$2(25.5) + 7 = 58$$

$$4(25.5) - 15 = 87$$

5)



$\triangle ABC \sim \triangle DEF$ SF $\rightarrow 3:7$

If $AC = 2x - 3$, $DE = 4x - 8$, and $DF = 3x + 6$, find AB

$$\frac{3}{7} = \frac{2x-3}{3x+6}$$

$$9x + 18 = 14x - 21$$

$$39 = 5x$$

$$x = 7.8$$

$$\frac{3}{7} = \frac{y}{23.2}$$

$$69.6 = 7y$$

$$y = 9.9$$

$$4x - 8 = 23.2$$

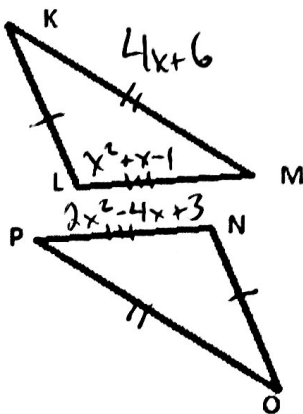
6) Using the diagram for #5 if $AC = 10$, $DF = 12.5$, $AB = 16$, $DE = 19.2$, and $m\angle C = m\angle F$; is $\triangle ABC \sim \triangle DEF$?

$$\frac{10}{12.5} \left(\frac{4}{5} \right)$$

$$\frac{16}{19.2} \left(\frac{5}{6} \right)$$

No b/c the corr sides do not have a common SF

7)



$\triangle LKM \cong \triangle NOP$

If $KM = 4x + 6$, $LM = x^2 + x - 1$, and $NP = 2x^2 - 4x + 3$

find OP .

$$LM = NP$$

$$x^2 + x - 1 = 2x^2 - 4x + 3$$

$$0 = x^2 - 5x + 4$$

$$0 = (x-1)(x-4)$$

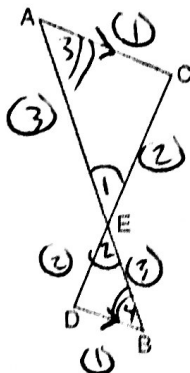
$$x = 1 \quad x = 4 \quad (\text{both work})$$

$$OP = KM$$

$$4(4) + 6 = 22$$

$$22$$

8) As shown in the diagram below, \overline{AB} and \overline{CD} intersect at E , and $\overline{AC} \parallel \overline{BD}$.



Which triangles are similar?

Which sides correspond?

$$\angle 1 \cong \angle 2 \rightarrow \text{vert } \angle \text{'s} \cong$$

$$\angle 3 \cong \angle 4 \rightarrow \text{alt int } \angle \text{'s} \cong$$

$$\triangle ACE \sim \triangle BDE$$

$$AC \cong DE$$