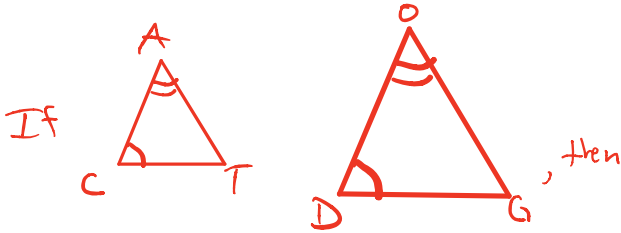


Similarity – Similar Triangles

Notes Section 7.3

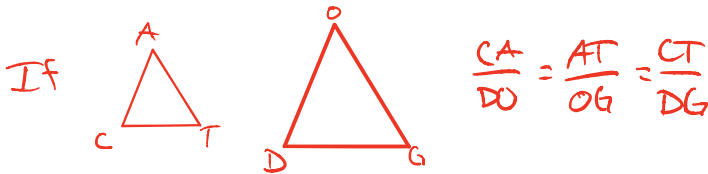
Name _____

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



$$\triangle CAT \sim \triangle DOG \quad \left(\frac{CA}{DO} = \frac{AT}{OG} = \frac{CT}{DG} \right)$$

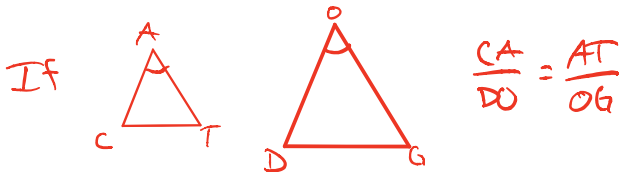
SSS Similarity: If the measures of the corresponding sides of two triangles are proportional, then the triangles are similar.



$$\frac{CA}{DO} = \frac{AT}{OG} = \frac{CT}{DG}$$

$$\triangle CAT \sim \triangle DOG$$

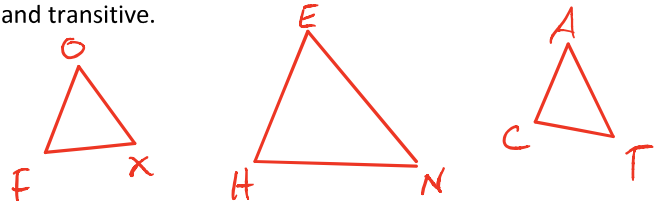
SAS Similarity: If the measures of two sides of a triangle are proportional to the measures of two corresponding sides of another triangle and the included angles are congruent, then the triangles are similar.



$$\frac{CA}{DO} = \frac{AT}{OG}$$

$$\triangle CAT \sim \triangle DOG$$

Theorem 7-3: Similarity of triangles is reflexive, symmetric, and transitive.



Reflexive

$$\triangle FOX \sim \triangle FOX$$

Symmetric

$$\text{If } \triangle HEN \sim \triangle FOX, \text{ then } \triangle FOX \sim \triangle HEN$$

Transitive

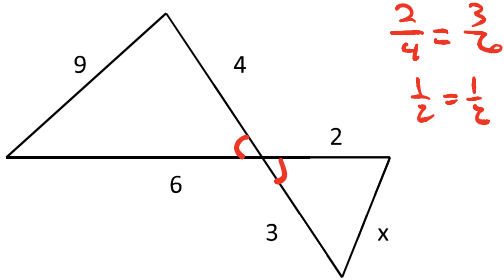
$$\text{If } \triangle HEN \sim \triangle FOX \text{ and } \triangle FOX \sim \triangle CAT, \\ \text{then } \triangle HEN \sim \triangle CAT$$

Similarity – Similar Triangles

Notes Section 7.3

Name _____

#1) Determine if each pair of triangles is similar. If similar, state the reason and find the missing measure.



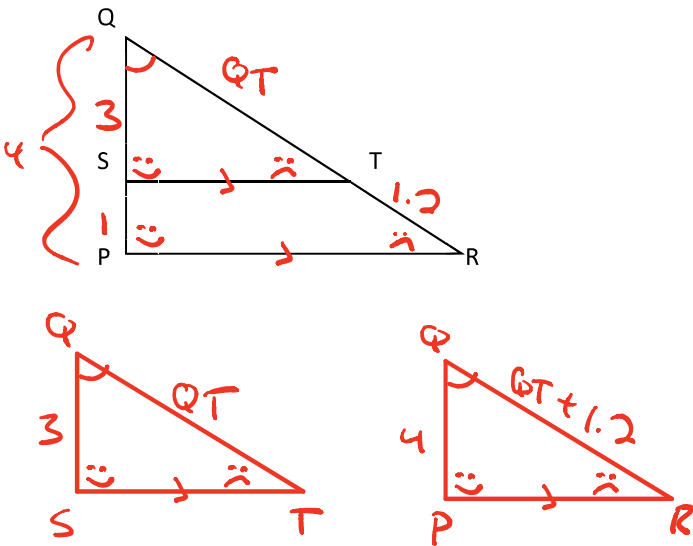
Similar by SAS similarity

$$\frac{2}{4} = \frac{x}{6}$$

$$\frac{1}{2} = \frac{x}{6}$$

$$\frac{1}{2} \cdot 6 = x$$

#2) In the figure, $\overline{ST} \parallel \overline{PR}$, $QS = 3$, $SP = 1$, and $TR = 1.2$. Find QT .



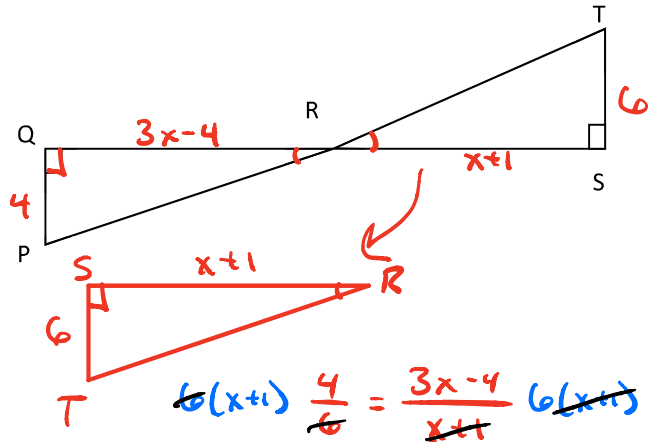
$$4(QT + 1.2) \cdot \frac{3}{4} = \frac{QT}{QT + 1.2} \cdot 4(QT + 1.2)$$

$$3(QT + 1.2) = 4QT$$

$$3QT + 3.6 = 4QT$$

$$3.6 = QT$$

#3) If $TS = 6$, $QP = 4$, $RS = x + 1$, and $QR = 3x - 4$, find the value of x



$$6(x+1) \cdot \frac{4}{6} = \frac{3x-4}{x+1} \cdot 6(x+1)$$

$$4(x+1) = 6(3x-4)$$

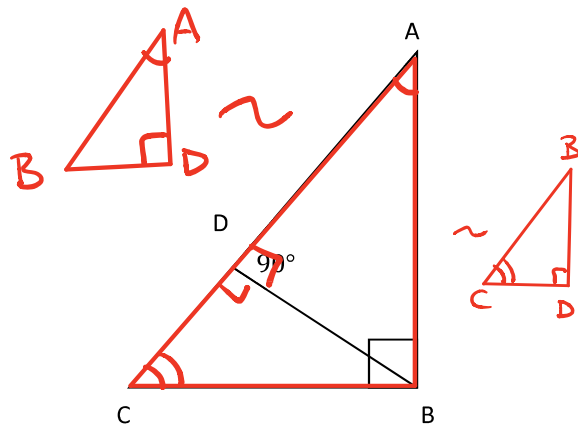
$$4x+4 = 18x-24$$

$$4 = 14x-24$$

$$28 = 14x$$

$$2 = x$$

#4) Identify the similar triangles in each figure. Explain your answer.



$\triangle BDC \sim \triangle ABC$ by AA Similarity
 $\triangle ABC \sim \triangle ADB$ by AA Similarity
 $\triangle ABC \sim \triangle ADB$ by similarity of Δs is transitive.