Chapter 8 Review **Name _____**
Honors Geometry

1. A radio antenna that is 100 m tall casts an 80-m shadow. At the same time, a nearby telephone pole casts a 16-m shadow. Find the height of the telephone pole.

2. Find the 2nd proportional if the 1st, 3rd, and 4th are 6, 8, and 9.

3. Find the geometric and arithmetic mean between 3 and 9.

4. 8 is the mean proportional between 3 and what number?

5. If $mx - ny = py + qx$, find the ratio of x to y.

6. If $\frac{8}{2x-3y} = \frac{5}{x+2y}$, find the ratio of x to y.

7. A scale model of the Titanic is 18 $\frac{1}{2}$ inches long. The scale is 1:570. To the nearest foot, how long was the Titanic?

8. Answer Always, Sometimes, or Never:

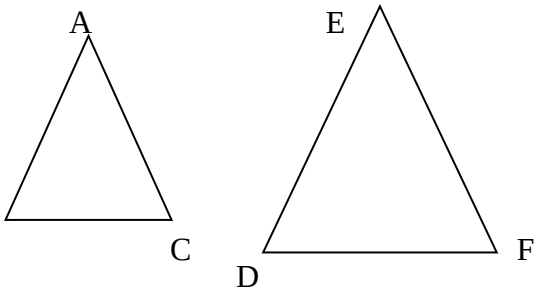
a. If 2 triangles are similar, then they are congruent. _____

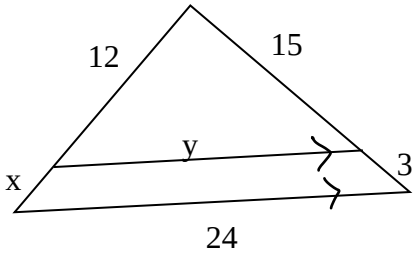
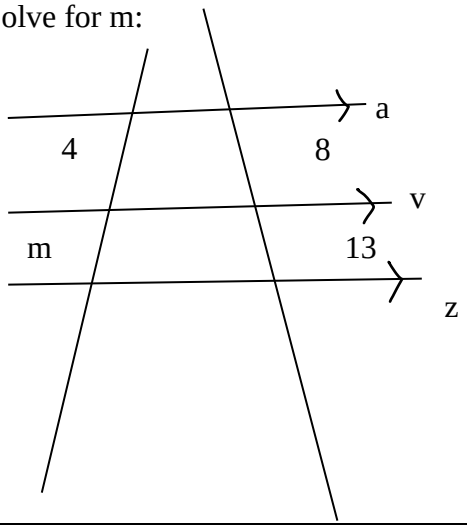
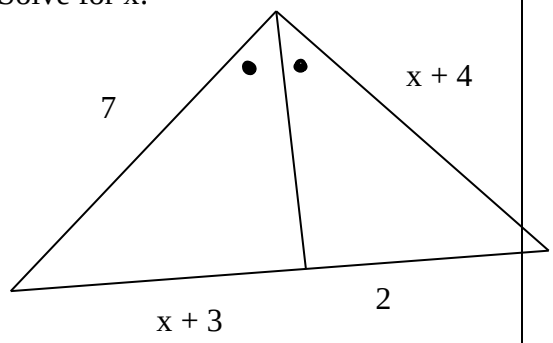
b. If 2 triangles are congruent, then they are similar. _____

c. Two squares are similar to each other. _____

d. Two rhombi are similar to each other. _____

e. If two quadrilaterals are similar, the ratio of their perimeters is equal to the ratio of their corresponding sides. _____

Solve proportions using the Means Extremes Product Theorem	Solve for x: $\frac{2x+1}{x-5}=\frac{x-1}{x-2}$	$x=\frac{-3\pm\sqrt{37}}{2}$	☺ 😐 ☹
Find the ratio of x to y	Find the ratio of x to y in the equations: a. $3(x-2y)=5(2x+6y)$ b. $gx+3hy=fx-2zy$	a. $\frac{x}{y}=\frac{-36}{7}$ b. $\frac{x}{y}=\frac{-2z-3h}{g-f}=\frac{2z+3h}{f-g}$	☺ 😐 ☹
Prove triangles similar	See book pg. 341 Problem 3		☺ 😐 ☹
Extensions of similar triangles	See book pg. 347 Problem 3		☺ 😐 ☹
Understand similar figure correspondence	Triangles ABC and EDF are similar and the side lengths are in the ratio of 2:3. The measure of $\angle A=(6x+y+3)°$, $\angle E=(2x+3y+5)°$, $AB=2y-x$ and $ED=3x+y-5$. Calculate the measure of AB.  	AB = 16	☺ 😐 ☹

Use similar triangles in application problems	You observe a tree casting a shadow. A flagpole that is 4 meters from the tree cast a 28 meter shadow. If the flagpole was 24 meters high, how tall was the tree if it is taller than the flagpole?	$\frac{192}{7}$ meters	☺ 😐 ☹
Understand the relationships between perimeter, area, and volume in similar figures	The ratio of the sides of two similar figures is 2/5. What are the ratios of the perimeters, areas, and volumes of the figures?	$R_P = 2/5$ $R_A = 4/25$ $R_V = 8/125$	☺ 😐 ☹
Apply the Side-Splitter Theorem	Solve for x and y: 	x = 2.4 y = 20	☺ 😐 ☹
Apply the Side-Splitter Corollary	Solve for m: 	m = 6.5	☺ 😐 ☹
Apply the Angle Bisector Theorem	Solve for x: 	$x = \frac{-7+\sqrt{57}}{2}$ (reject the – case since it would make the side length negative)	☺ 😐 ☹