Simplify:

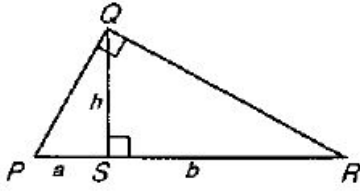1. $\sqrt{112}$ 3. $\sqrt{32}$

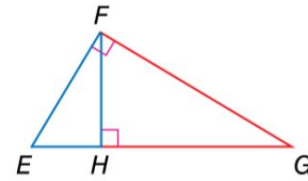2. $\sqrt{15 * 20}$ 4. $\sqrt{90}$

Geometric Mean:

1. Find the geometric mean between 8 and 10.

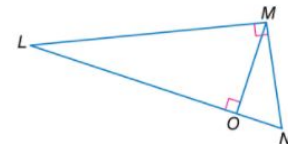2. Find the geometric mean between 5 and 45.

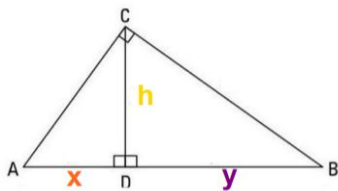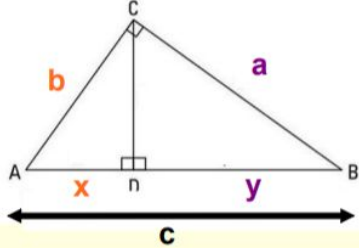| Theorem 8.1	If the altitude is drawn to the hypotenuse of a right triangle, then the two triangles formed are similar to the original triangle and to each other.	$\triangle PQR \sim \triangle PSQ$ $\triangle PQR \sim \triangle RSQ$ $\triangle RSQ \sim \triangle PSQ$

3. Write a similarity statement identifying the three similar right triangles in the figure.

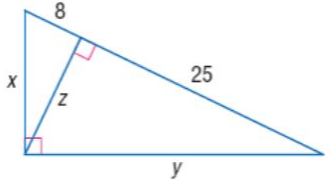4. Write a similarity statement identifying the three similar right triangles in the figure.

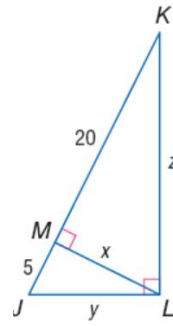| Geometric Mean (Altitude) Theorem	The altitude drawn to the hypotenuse of a right triangle separates the hypotenuse into two segments. The length of this altitude is the geometric mean between the lengths of these two segments.	 $\frac{x}{h} = \frac{h}{y}$ or $h = \sqrt{xy}$
Geometric Mean (Leg) Theorem	The altitude drawn to the hypotenuse of a right triangle separates the hypotenuse into two segments. The length of a leg of this triangle is the geometric mean between the length of the hypotenuse and the segment of the hypotenuse adjacent to that leg.	 $\frac{c}{b} = \frac{b}{x}$ or $b = \sqrt{cx}$ And $\frac{c}{a} = \frac{a}{y}$ or $a = \sqrt{cy}$

5. Find x, y, and z

   a.

   b.

6. Find c, d, and e