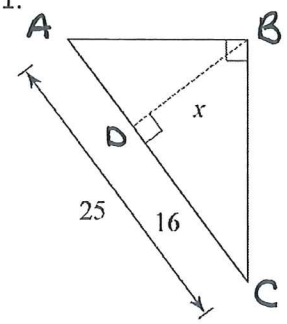
Name: Key ACC Geometry Hour: _____

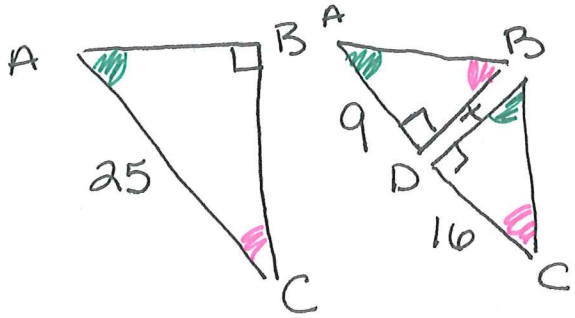
Similar Right Triangle Homework

Directions: Draw out the 3 triangles and color code to help find all of the missing variables. In each problem, find the missing length(s) that are indicated. Leave your answer in SIMPLEST RADICAL FORM!

1.



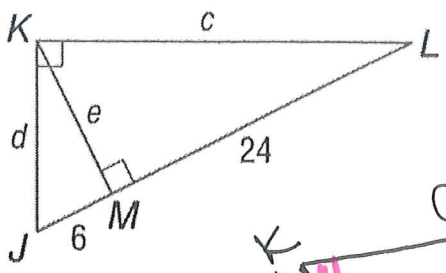
$\triangle ABC \sim \triangle ADB \sim \triangle BDC$



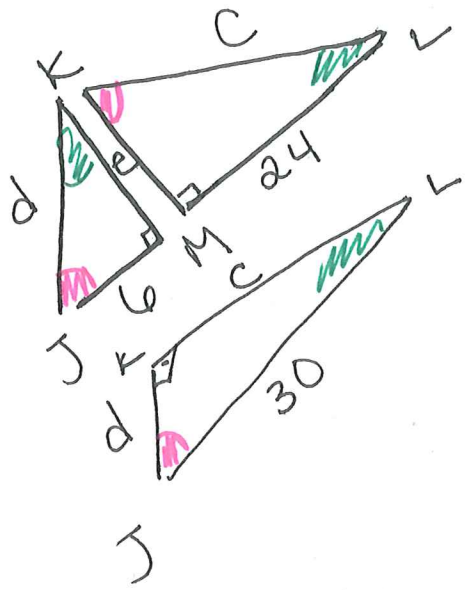
$$\frac{x}{16} = \frac{9}{x}$$

$$\boxed{x = 12}$$

2.



$\triangle MKL \sim \triangle MJK \sim \triangle KJL$



$$\frac{c}{30} = \frac{24}{c}$$

$$\sqrt{c^2} = \sqrt{720}$$

$$\boxed{c = 12\sqrt{5}}$$

$$\frac{e}{6} = \frac{24}{e}$$

$$e^2 = 144$$

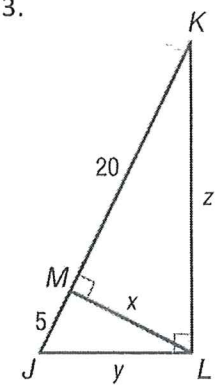
$$\boxed{e = 12}$$

$$\frac{d}{30} = \frac{6}{d}$$

$$\sqrt{d^2} = \sqrt{180}$$

$$\boxed{d = 6\sqrt{5}}$$

3.



$\triangle JML \sim \triangle \underline{LMK} \sim \triangle \underline{JLK}$

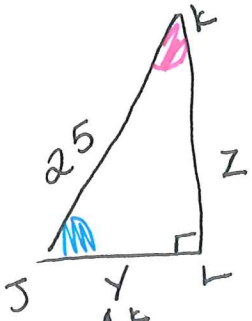
$\frac{x}{5} = \frac{20}{x}$

$\boxed{x = 10}$

$\frac{y}{25} = \frac{5}{y}$

$y^2 = 125$

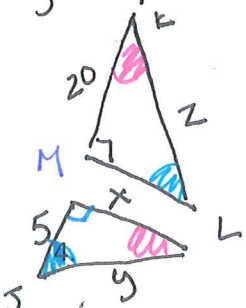
$\boxed{y = 5\sqrt{5}}$

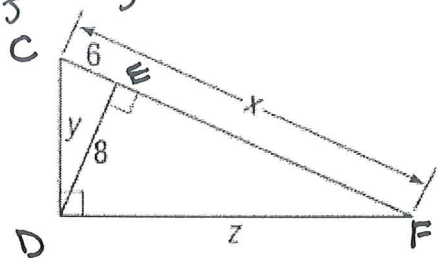


$\frac{z}{20} = \frac{25}{z}$

$z^2 = 500$

$\boxed{z = 10\sqrt{5}}$





$\triangle EFD \sim \triangle \underline{EDC} \sim \triangle \underline{DFC}$

$\frac{x+6}{8} = \frac{8}{6}$

$6x - 36 = 64$

$x = \frac{100}{6}$

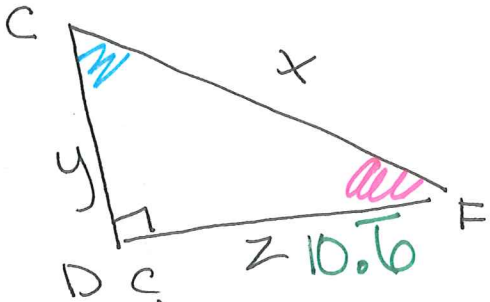
$\boxed{x = \frac{50}{3}}$

$x = 16.\overline{6}$

$6^2 + 8^2 = y^2$

$\sqrt{100} = \sqrt{y^2}$

$\boxed{10 = y}$



$\boxed{z = 10.\overline{6}}$