(1.) 4 and 25

$$\frac{4}{x} = \frac{x}{25}$$

$$x^2 = 100$$

$$\boxed{x = 10}$$

(2.) 10 and 100

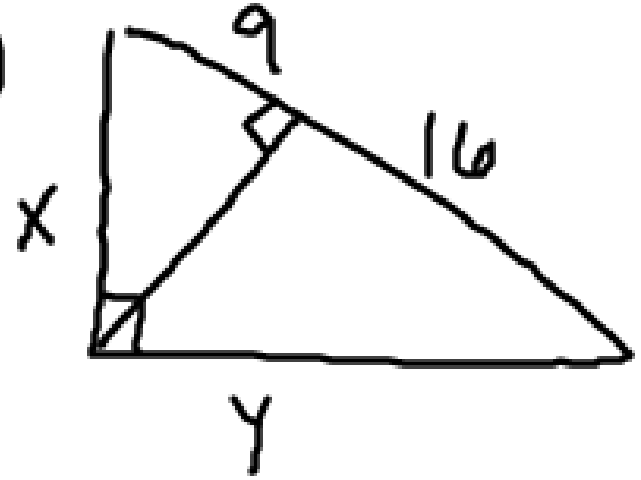
$$\frac{10}{x} = \frac{x}{100}$$

$$x^2 = 1000$$

$$\boxed{x \approx 31.6}$$

or $10\sqrt{10}$

3.



$$\frac{25}{x} = \frac{x}{9}$$

$$x^2 = 225$$

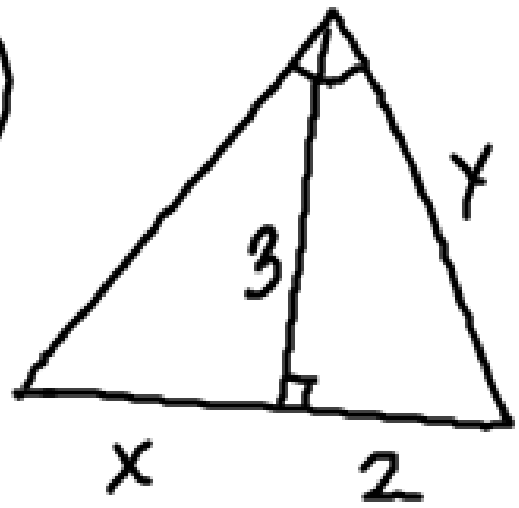
$$x = 15$$

$$\frac{25}{y} = \frac{y}{16}$$

$$y^2 = 400$$

$$y = 20$$

4.



$$\frac{x}{3} = \frac{3}{2}$$

$$2x = 9$$

$$\boxed{x = 4.5}$$

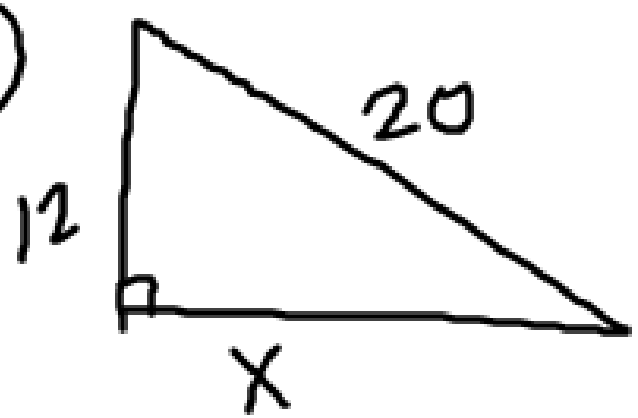
$$\frac{6.5}{y} = \frac{y}{2}$$

$$y^2 = 13$$

$$\boxed{y \approx 3.6}$$

or $\sqrt{13}$

5.



$12^2 + x^2 = 20^2$

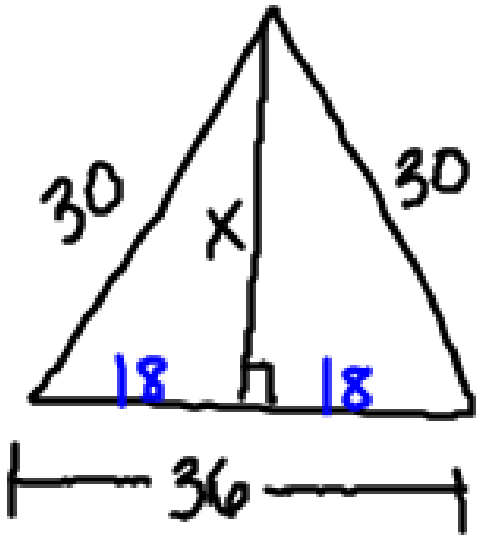
$144 + x^2 = 400$

$-144 \quad -144$

$x^2 = 256$

$x = 16$

6.



$x^2 + 18^2 = 30^2$

$x^2 + 324 = 900$

$-324 \quad -324$

$x^2 = 576$

$x = 24$

(7.) $S(2,-1)$ $T(5,4)$ $U(6,-3)$

$ST: \sqrt{(2-5)^2+(-1-4)^2} = \sqrt{9+25} = \sqrt{34}$

$TU: \sqrt{(5-6)^2+(4-3)^2} = \sqrt{1+49} = \sqrt{50}$

$SU: \sqrt{(2-6)^2+(-1-3)^2} = \sqrt{16+4} = \sqrt{20}$

$+ = 54$

NO

(8.) 10, 15, 20

$10^2+15^2=20^2$

$100+225=400$

$325=400$ X

NO, NO

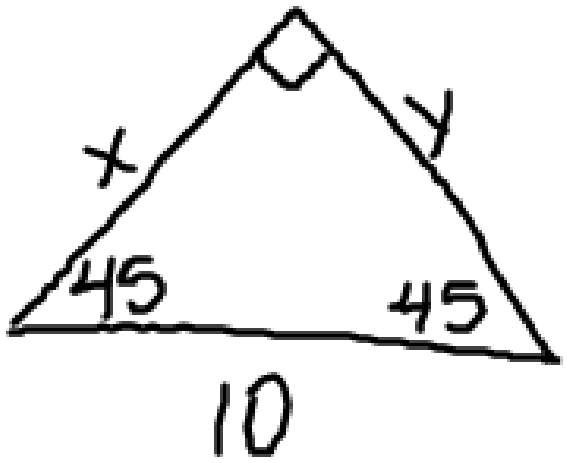
(9) $2, \sqrt{8}, \sqrt{12}$

$2^2 + (\sqrt{8})^2 = (\sqrt{12})^2$

$4 + 8 = 12$ ✓

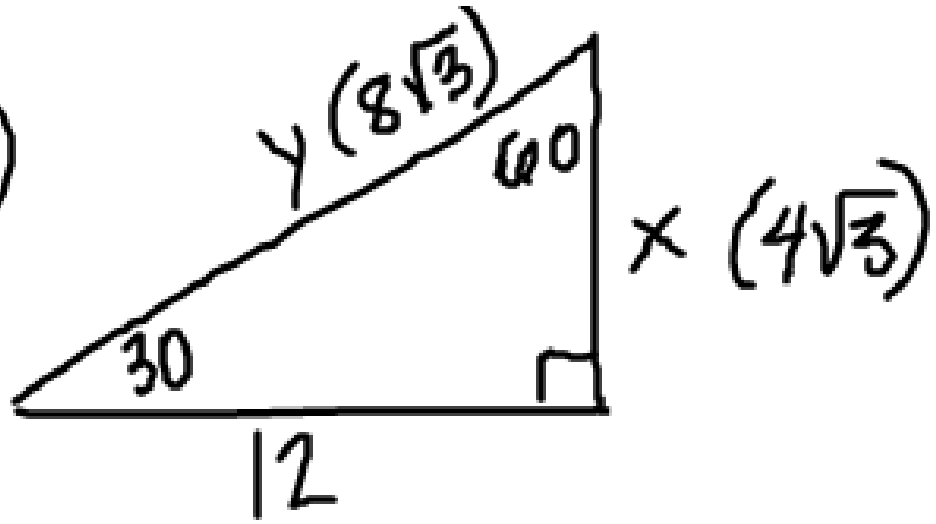
Yes, NO

10.



$$\frac{10}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{10\sqrt{2}}{2} = \boxed{5\sqrt{2}}$$ - both x and y

11.



$$\frac{12}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{12\sqrt{3}}{3} = 4\sqrt{3}$$

$$4\sqrt{3} \cdot 2 = 8\sqrt{3}$$