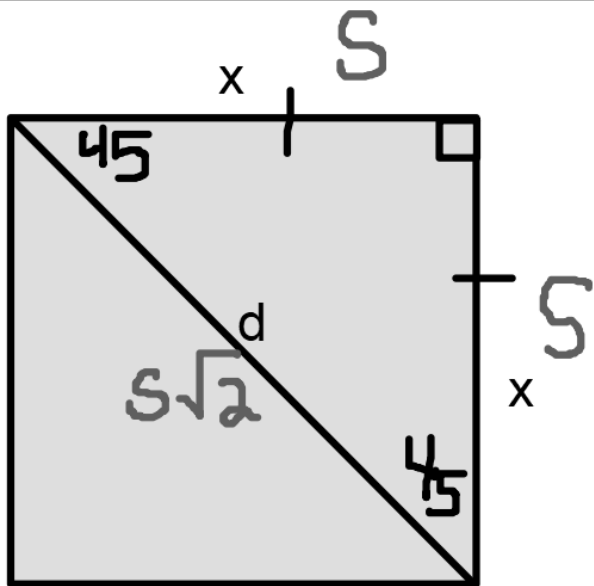


Special Right Triangles Lesson 6-2 Section 8-3

G.SRT.6

OBJ: Use properties of 45° - 45° - 90°

Use properties of 30° - 60° - 90°



$$45-45-90 \rightarrow \sqrt{2}$$

$$30-60-90 \rightarrow \sqrt{3}, 2$$

$$x^2 + x^2 = d^2$$

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

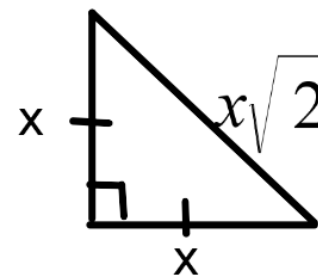
$$x\sqrt{2} = d$$

In a 45° - 45° - 90° triangle, the length of the hypotenuse is  $\sqrt{2}$  times the length of a leg.

The ratio of sides if a 45°:45°:90° triangle is

$$x : x : x\sqrt{2}$$

$$s \quad s \quad s\sqrt{2}$$



Special Right Triangles Lesson 6-2 Section 8-3

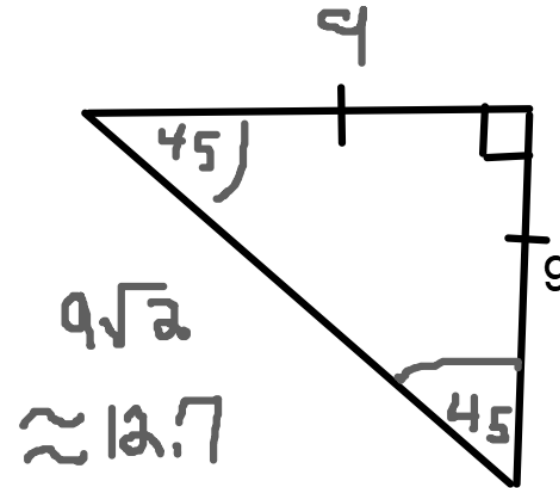
G.SRT.6

OBJ: Use properties of 45°- 45°- 90°

Use properties of 30°- 60°- 90°

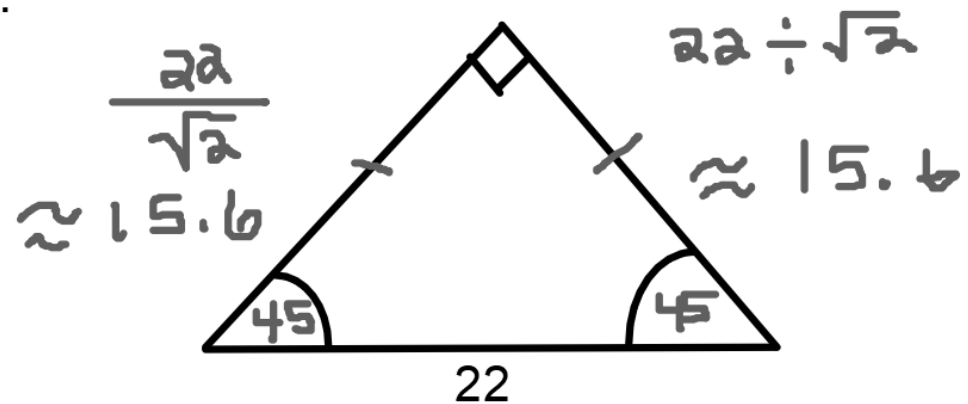
If you have a leg.....

multiply the leg by  $\sqrt{2}$



If you have the hypotenuse.....

divide the hypotenuse by  $\sqrt{2}$



Special Right Triangles Lesson 6-2 Section 8-3

G.SRT.6

OBJ: Use properties of  $45^\circ-45^\circ-90^\circ$

Use properties of  $30^\circ-60^\circ-90^\circ$

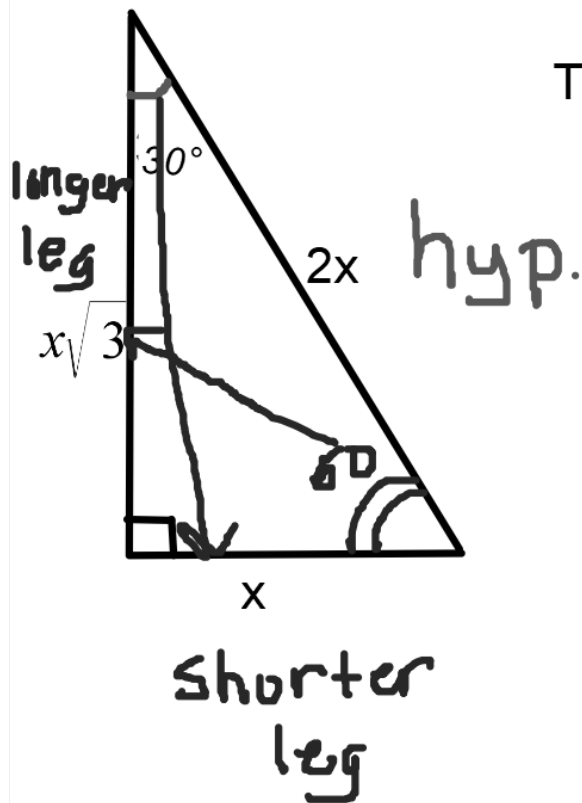
In a  $30^\circ-60^\circ-90^\circ$  triangle, the length of the hypotenuse is twice the length of the shorter leg, and the length of the longer leg is  $\sqrt{3}$  times the length of the shorter leg.

Find shorter leg first

The ratio of sides of a 30-60-90 triangles is

$$x : x\sqrt{3} : 2x$$

$$5 : 5\sqrt{3} : 25$$



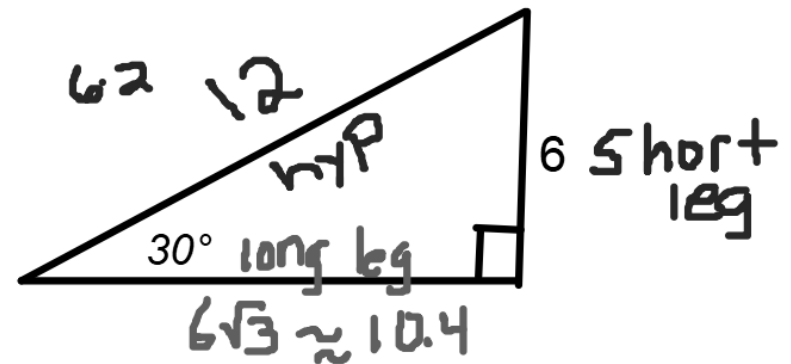
Special Right Triangles Lesson 6-2 Section 8-3

G.SRT.6

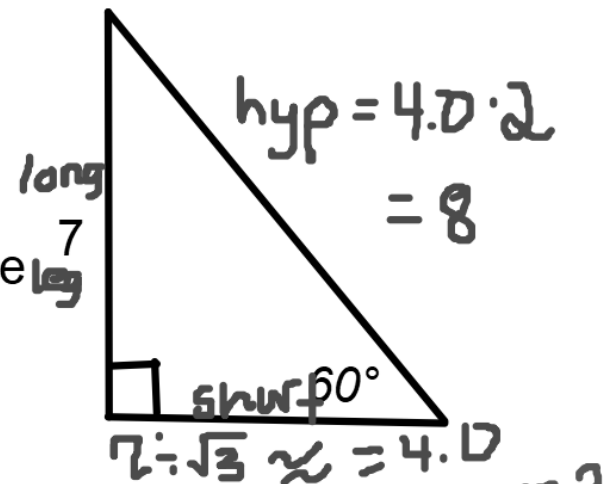
OBJ: Use properties of 45°- 45°- 90°

Use properties of 30°- 60°- 90°

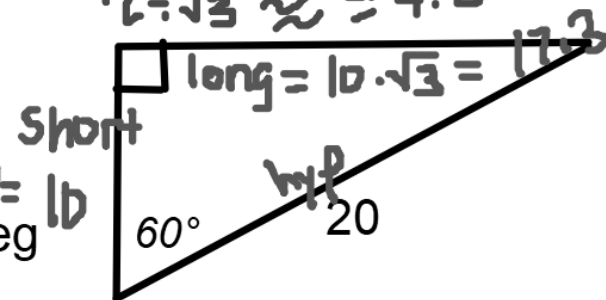
If you have the short leg.....  
 multiply by 2 to find the hypotenuse  
 multiply by  $\sqrt{3}$  to find the long leg



If you have the long leg.....  
 divide by  $\sqrt{3}$  to find the short leg and then  
 multiply the short leg by 2 to find the hypotenuse



If you have the hypotenuse.....  
 divide by 2 to find the short leg and then  
 multiply the short leg by  $\sqrt{3}$  to find the long leg



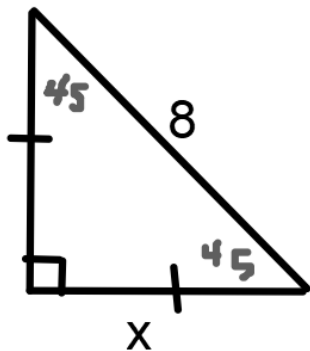
Special Right Triangles Lesson 6-2 Section 8-3

G.SRT.6

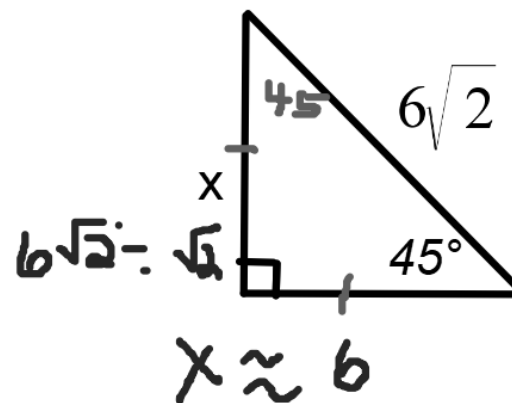
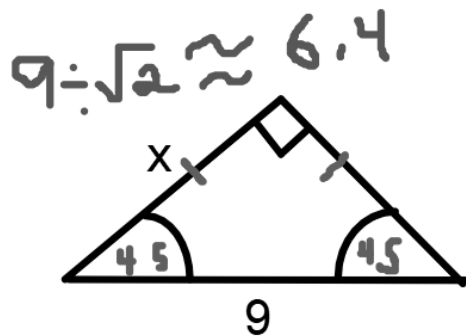
OBJ: Use properties of  $45^\circ-45^\circ-90^\circ$

Use properties of  $30^\circ-60^\circ-90^\circ$

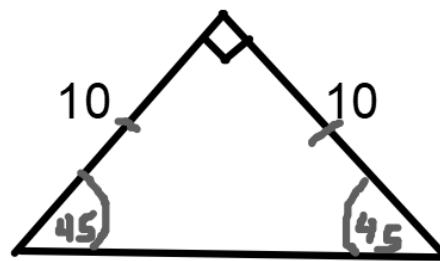
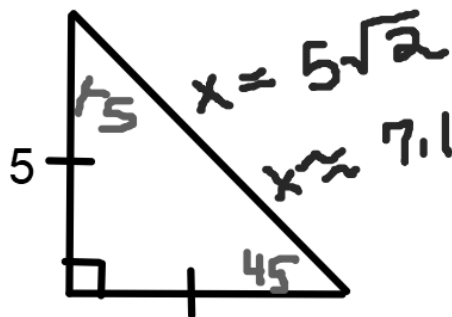
Find the measure of the legs.



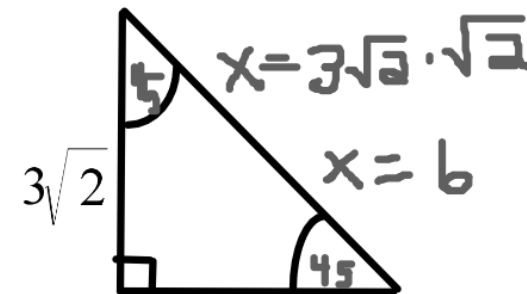
$$8 \div \sqrt{2} \approx 5.7$$



Find the hypotenuse.



$$x = 10\sqrt{2} \approx 14.1$$



Special Right Triangles Lesson 6-2 Section 8-3

G.SRT.6

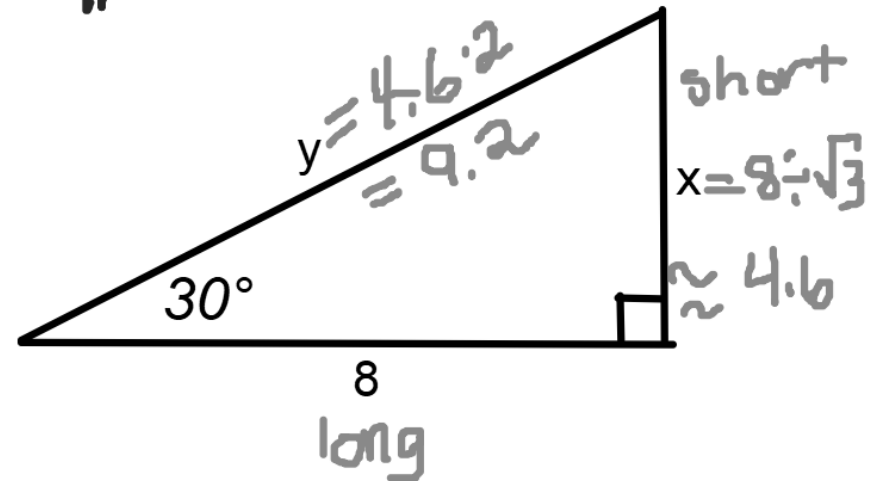
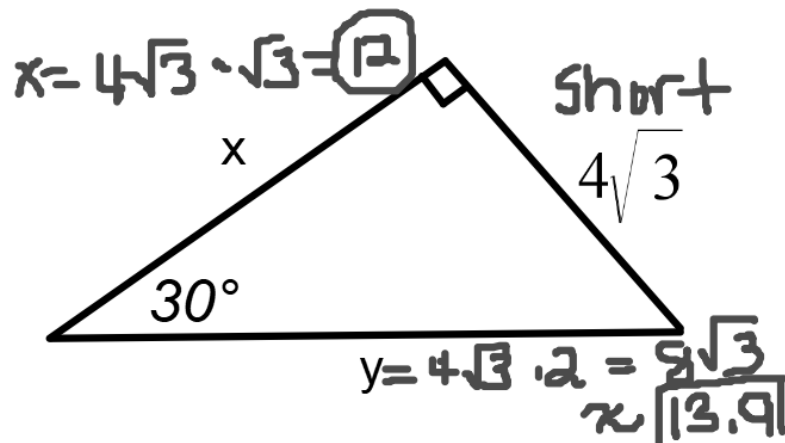
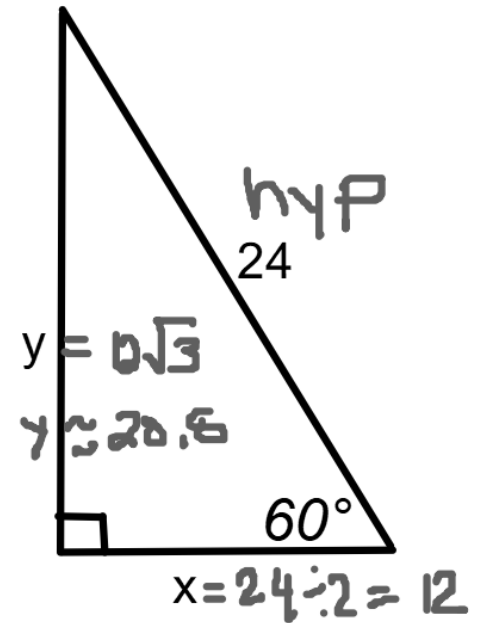
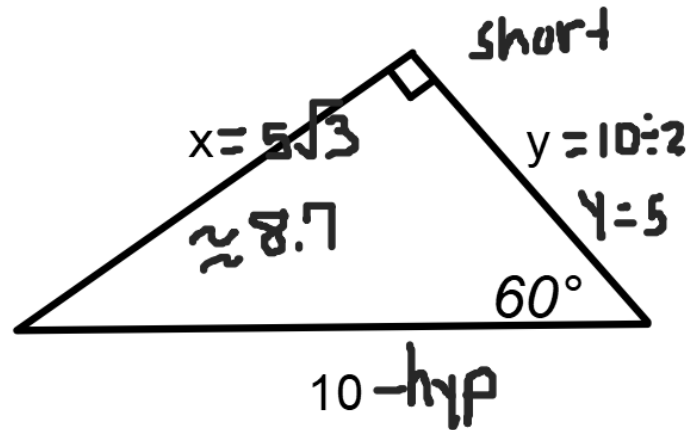
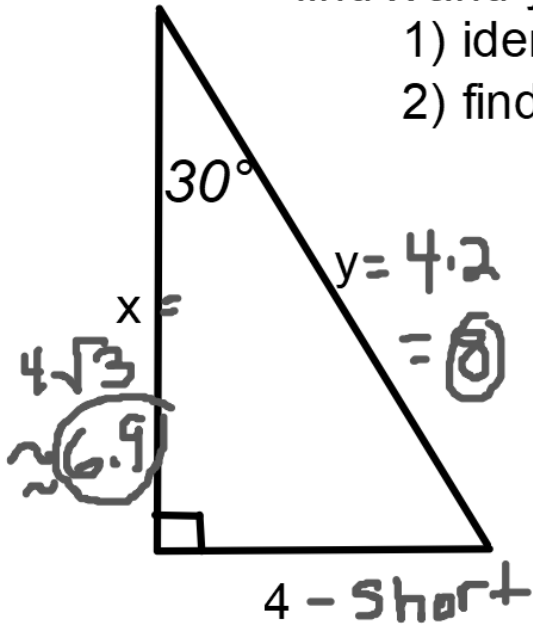
OBJ: Use properties of 45°- 45°- 90°

Use properties of 30°- 60°- 90°

Special Right Triangles Lesson 7-3

find x and y

- 1) identify the side you know
- 2) find the short leg first



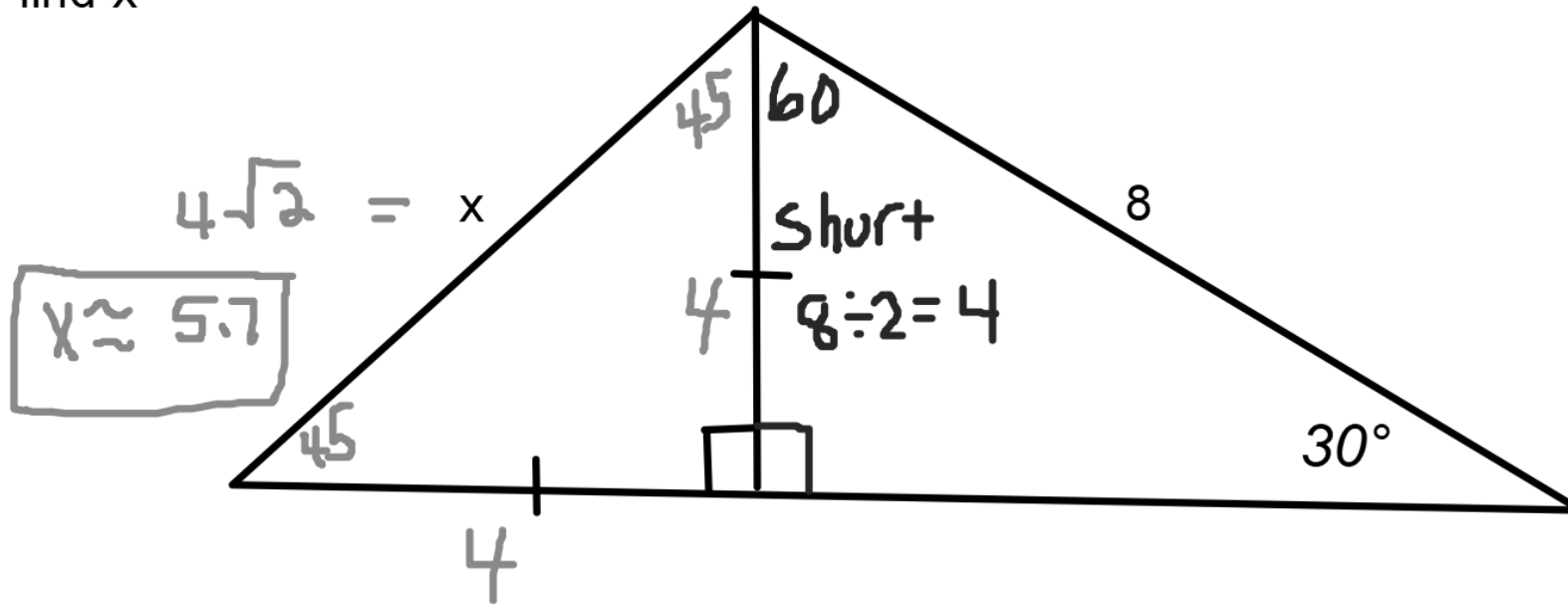
Special Right Triangles Lesson 6-2 Section 8-3

G.SRT.6

OBJ: Use properties of  $45^\circ-45^\circ-90^\circ$

Use properties of  $30^\circ-60^\circ-90^\circ$

find x



Special Right Triangles Lesson 6-2 Section 8-3

G.SRT.6

OBJ: Use properties of  $45^\circ-45^\circ-90^\circ$

Use properties of  $30^\circ-60^\circ-90^\circ$

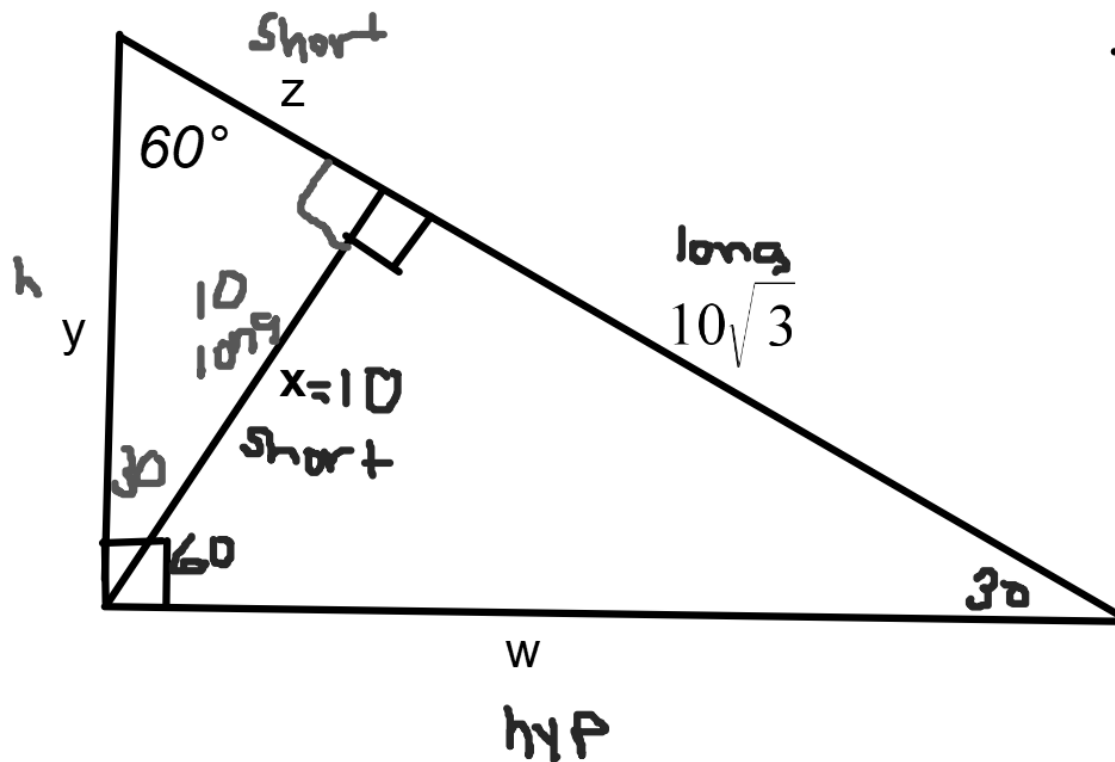
find w, x, y and z

$$W = 10 \cdot 2 = 20$$

$$x = 10\sqrt{3} \div \sqrt{3} = 10$$

$$y = 5.8 \cdot 2 = 11.6$$

$$z = 10 \div \sqrt{3} = 5.8$$





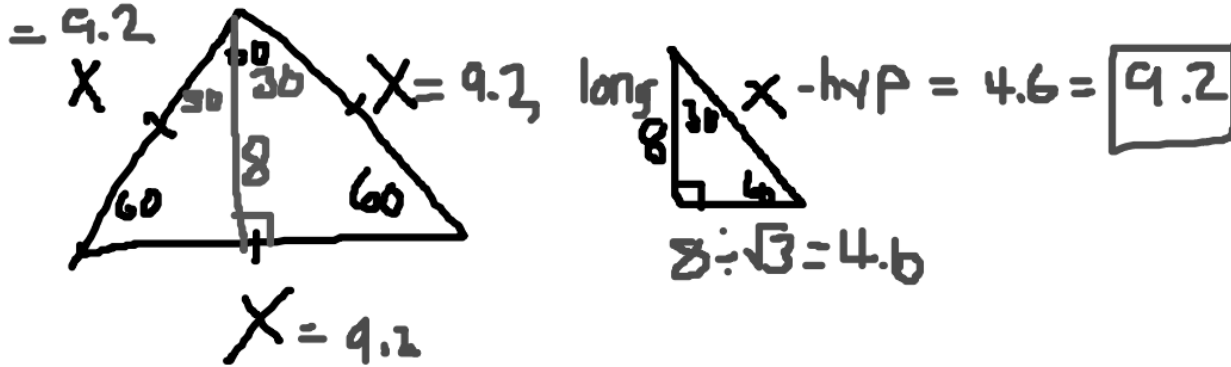
Special Right Triangles Lesson 6-2 Section 8-3

G.SRT.6

OBJ: Use properties of 45°- 45°- 90°

Use properties of 30°- 60°- 90°

The altitude of an equilateral triangle is 8, find the length of each side.



The diagonal of a square is 8, find the length of the side of the square.

