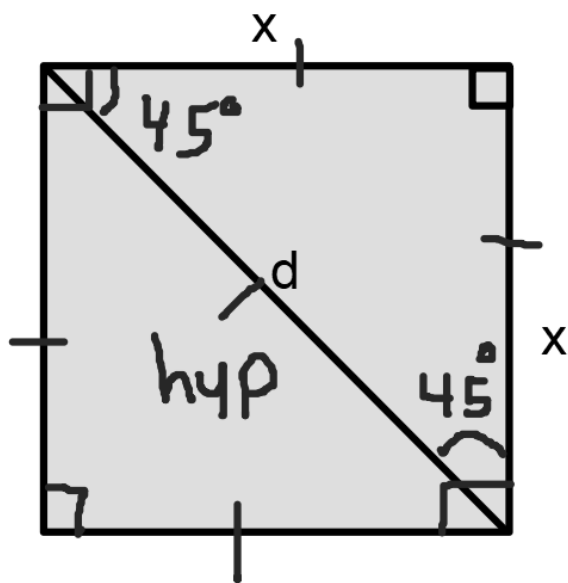


Special Right Triangles Lesson 6-2 Section 8-3

G.SRT.6

OBJ: Use properties of 45°- 45°- 90°

Use properties of 30°- 60°- 90°



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

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

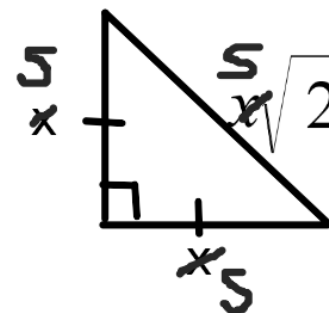
$$x \sqrt{2} = d$$

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

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

$$5 : 5 : 5\sqrt{2}$$



Special Right Triangles Lesson 6-2 Section 8-3

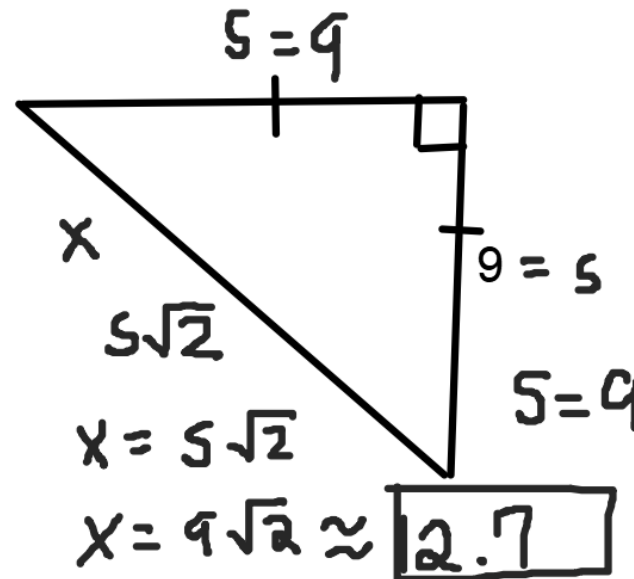
G.SRT.6

OBJ: Use properties of 45°- 45°- 90°

Use properties of 30°- 60°- 90°

If you have a leg.....

multiply the leg by $\sqrt{2}$

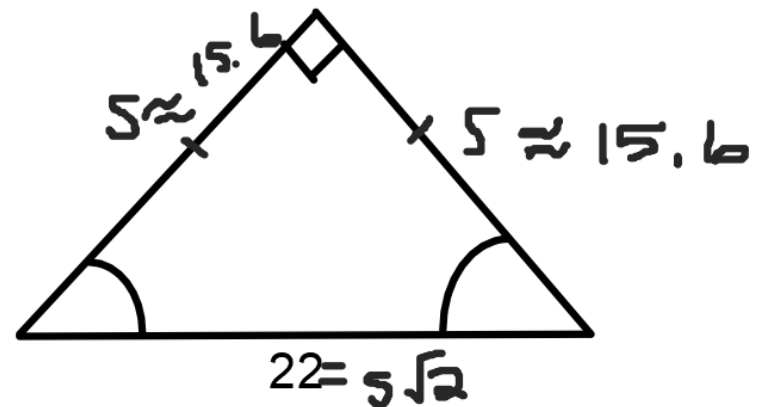


If you have the hypotenuse.....

divide the hypotenuse by $\sqrt{2}$

$$\frac{22}{\sqrt{2}} = \frac{5\sqrt{2}}{\sqrt{2}}$$

$$15.6 \approx 5$$



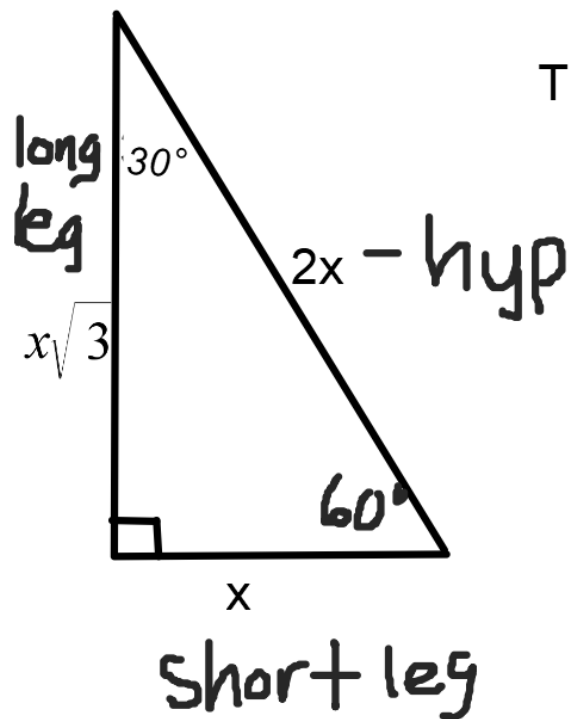
Special Right Triangles Lesson 6-2 Section 8-3

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.



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

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

$$5 : 5\sqrt{3} : 10$$

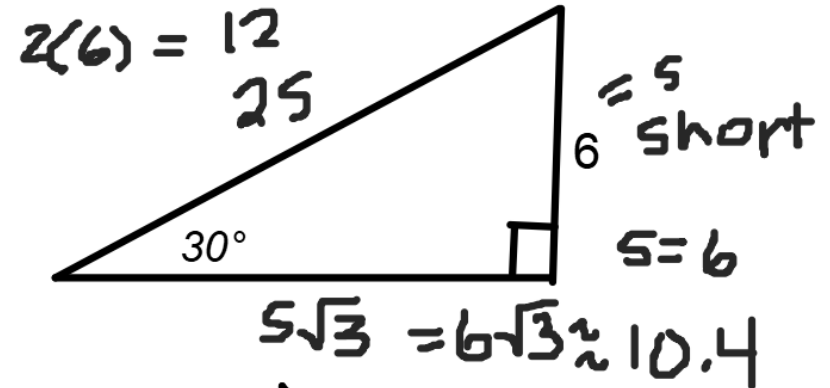
Special Right Triangles Lesson 6-2 Section 8-3

G.SRT.6

OBJ: Use properties of 45°- 45°- 90°

Use properties of 30°- 60°- 90°

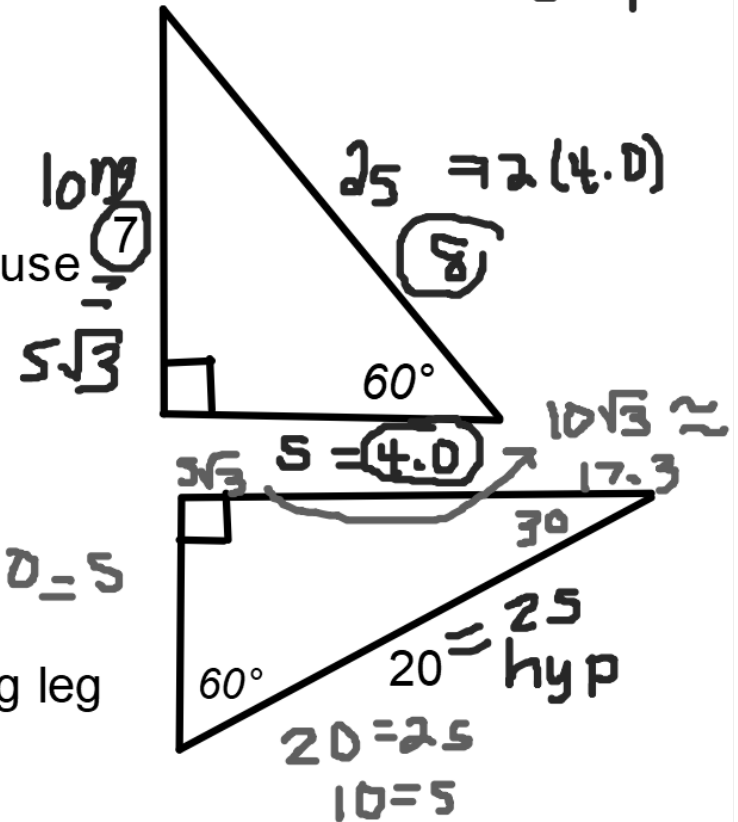
If you have the short leg.....
 multiply by 2 to find the hypotenuse
 multiply by $\sqrt{3}$ to find the long leg



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

$$\frac{7}{\sqrt{3}} = \frac{5\sqrt{3}}{\sqrt{3}} \rightarrow 5 \approx 4.0$$



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

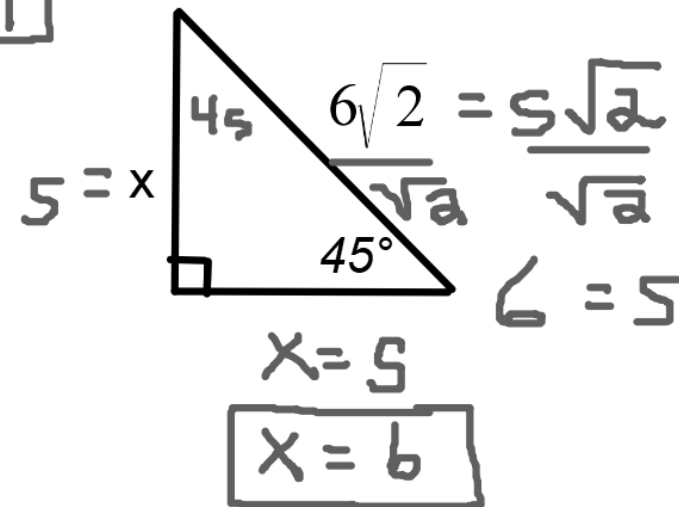
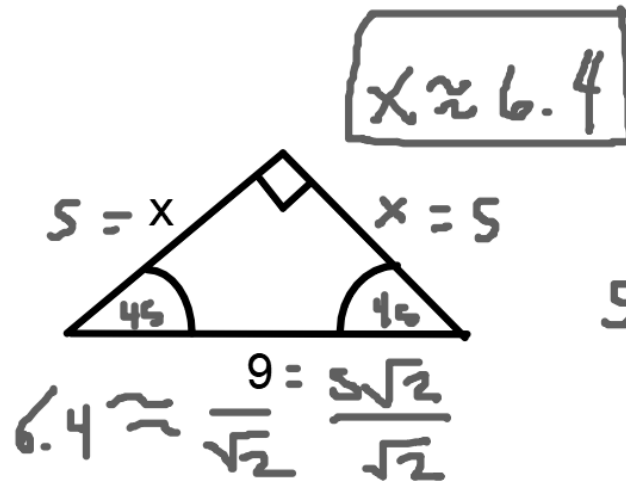
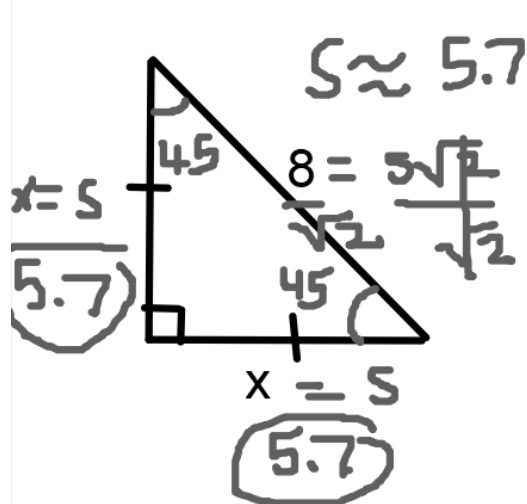
Special Right Triangles Lesson 6-2 Section 8-3

G.SRT.6

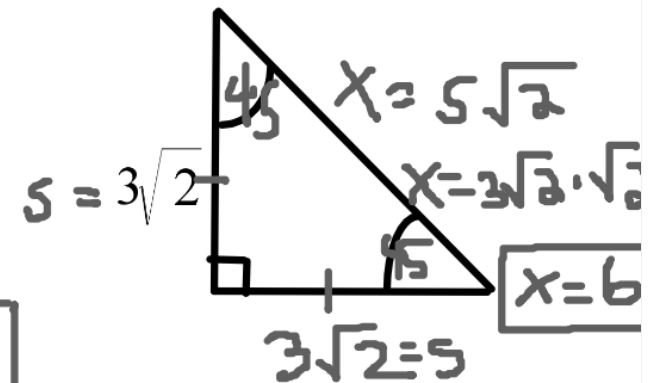
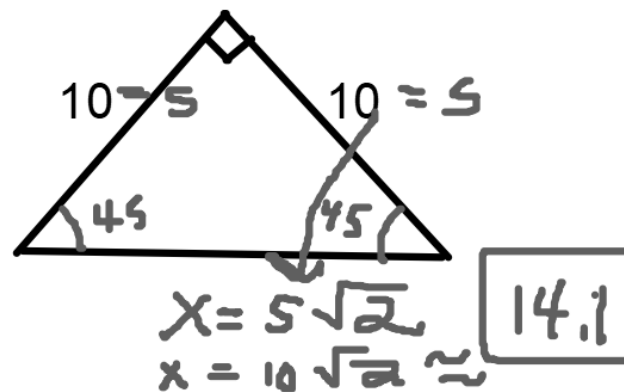
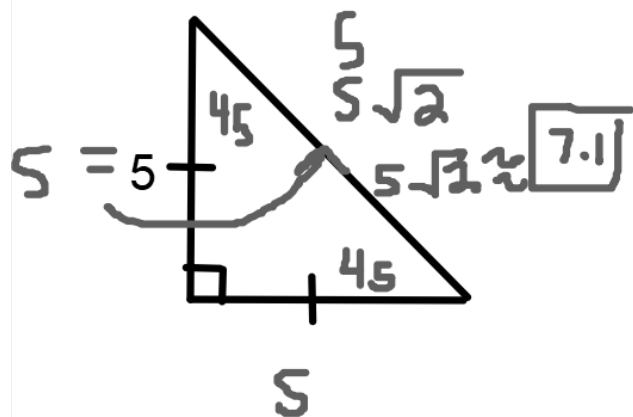
OBJ: Use properties of 45°- 45°- 90°

Use properties of 30°- 60°- 90°

Find the measure of the legs.



Find the hypotenuse.



Special Right Triangles Lesson 6-2 Section 8-3

G.SRT.6

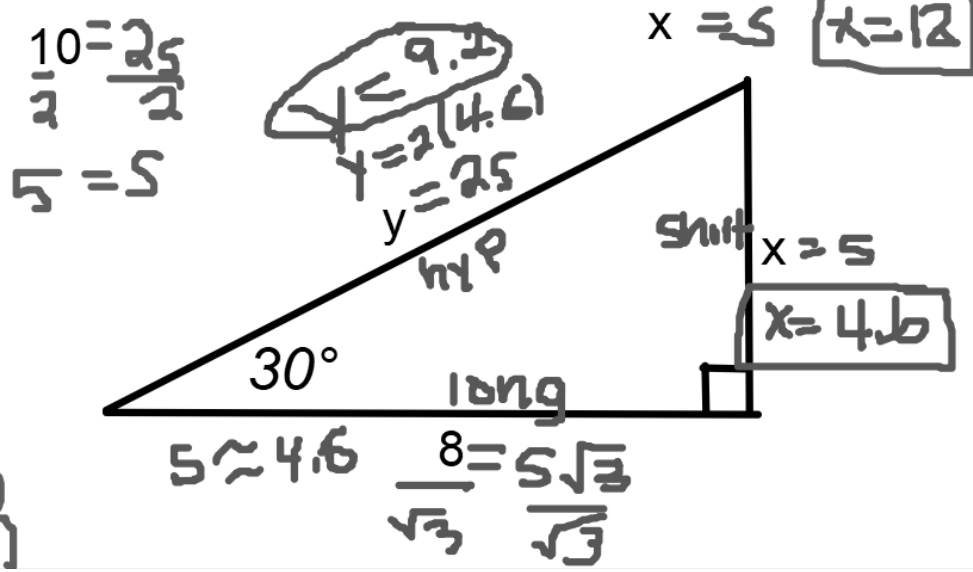
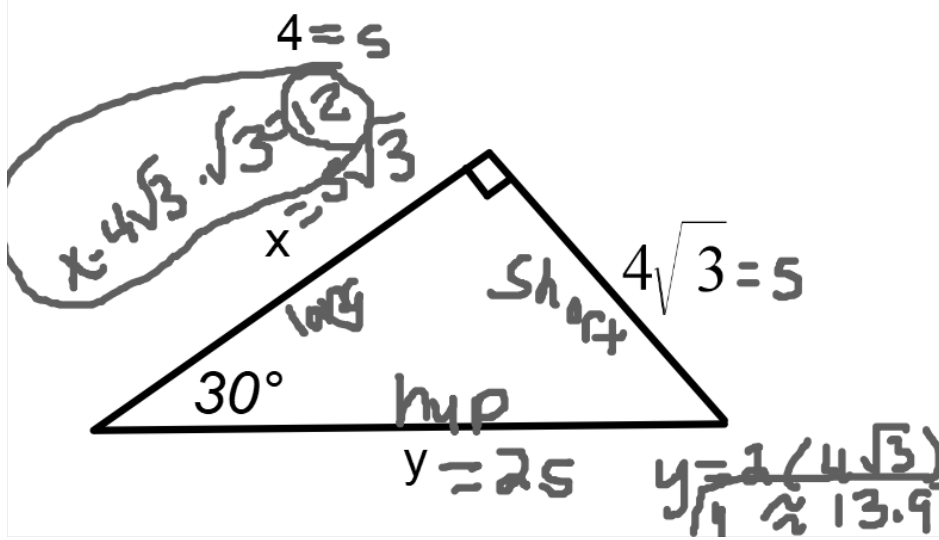
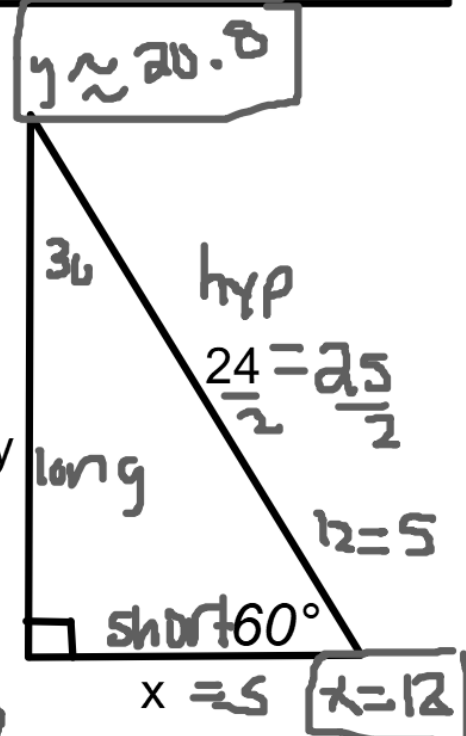
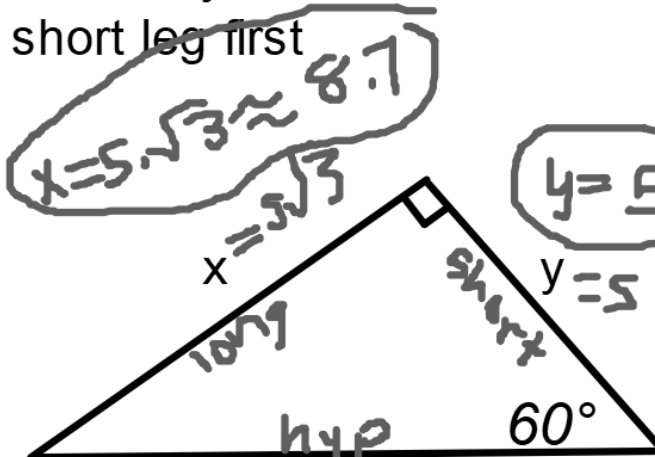
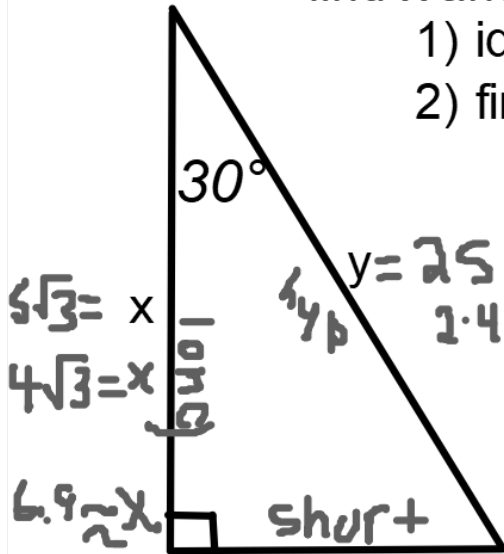
OBJ: Use properties of 45°- 45°- 90°

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



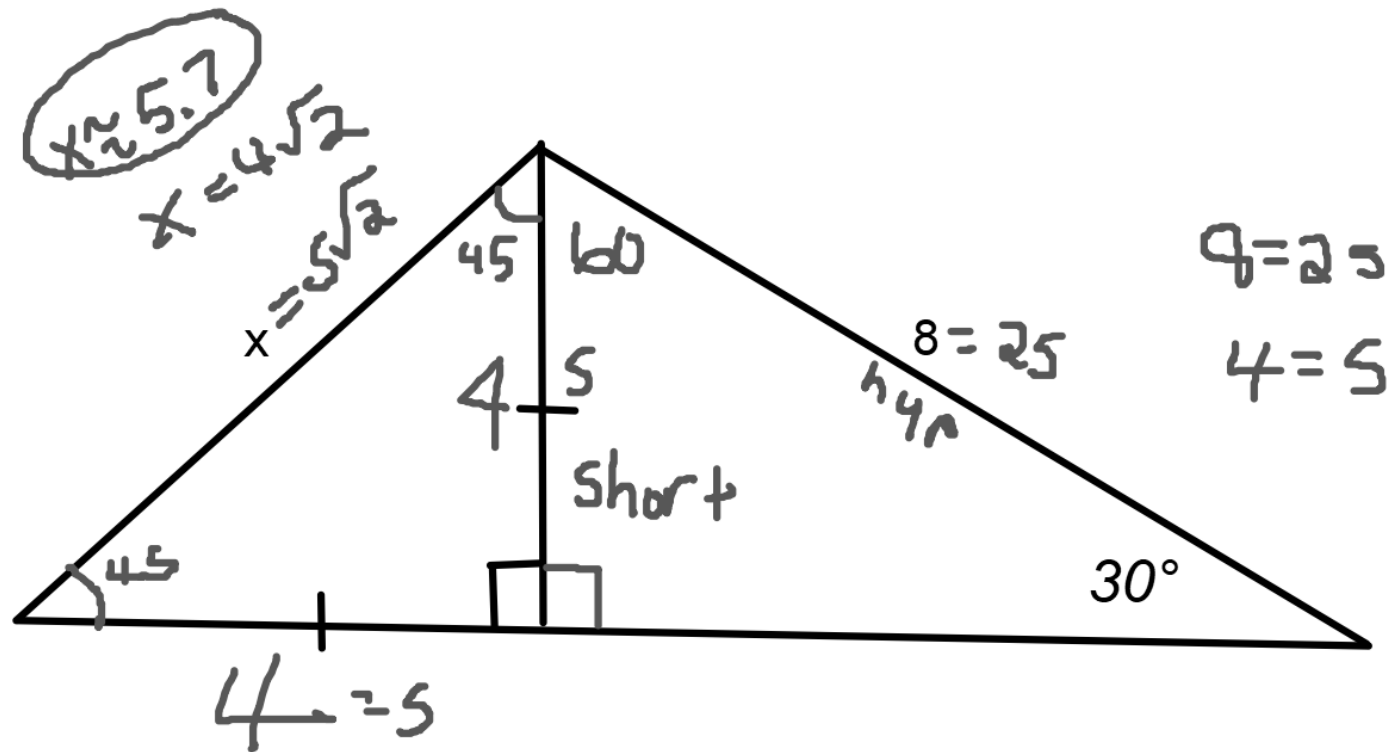
Special Right Triangles Lesson 6-2 Section 8-3

G.SRT.6

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

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

find x



A

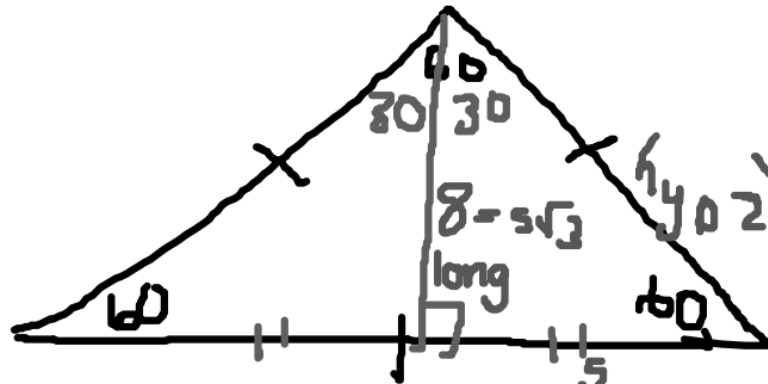
Special Right Triangles Lesson 6-2 Section 8-3

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.

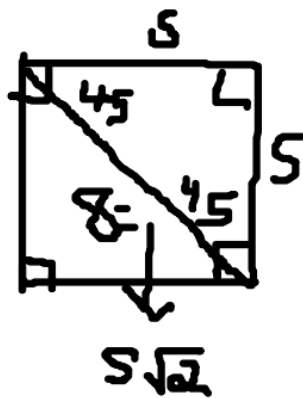


$$\frac{8 = s\sqrt{3}}{\sqrt{3}} \quad \frac{\sqrt{3}}{\sqrt{3}}$$

$$4.6 \approx s$$

$$2 \cdot 4.6 = \boxed{9.2}$$

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



$$\frac{8 = s\sqrt{2}}{\sqrt{2}} \quad \frac{\sqrt{2}}{\sqrt{2}}$$

$$\boxed{s \approx 5.7}$$