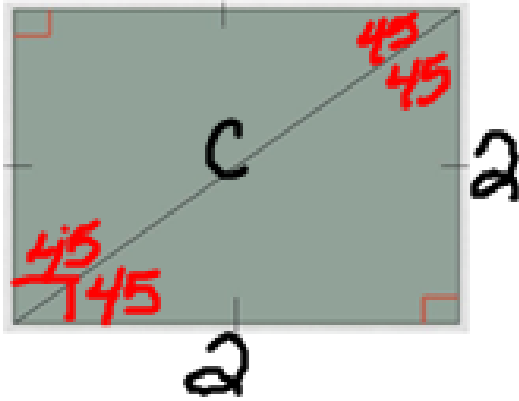
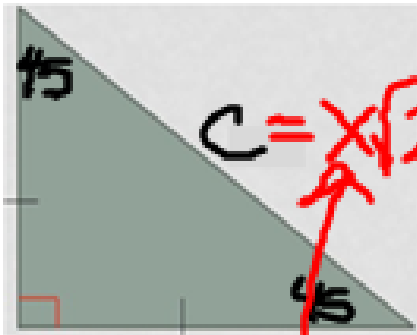


### 45-45-90



$$\begin{aligned} 2^2 + 2^2 &= c^2 \\ 4 + 4 &= c^2 \\ \sqrt{8} &= \sqrt{c^2} \end{aligned}$$

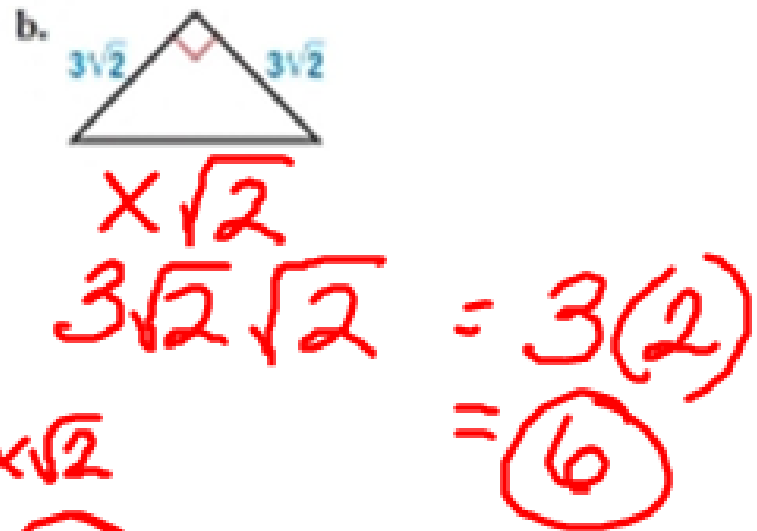
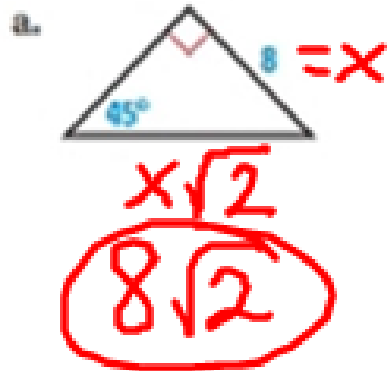
$$\sqrt{2} \quad \sqrt{4} \quad c = 2\sqrt{2}$$



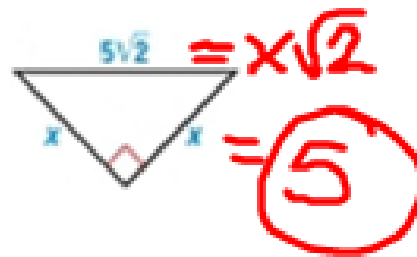
$$\begin{aligned} 3^2 + 3^2 &= c^2 \\ 9 + 9 &= c^2 \\ \sqrt{18} &= \sqrt{c^2} \end{aligned}$$

$$\sqrt{2} \quad \sqrt{9} \quad c = 3\sqrt{2}$$

Find the length of the hypotenuse.

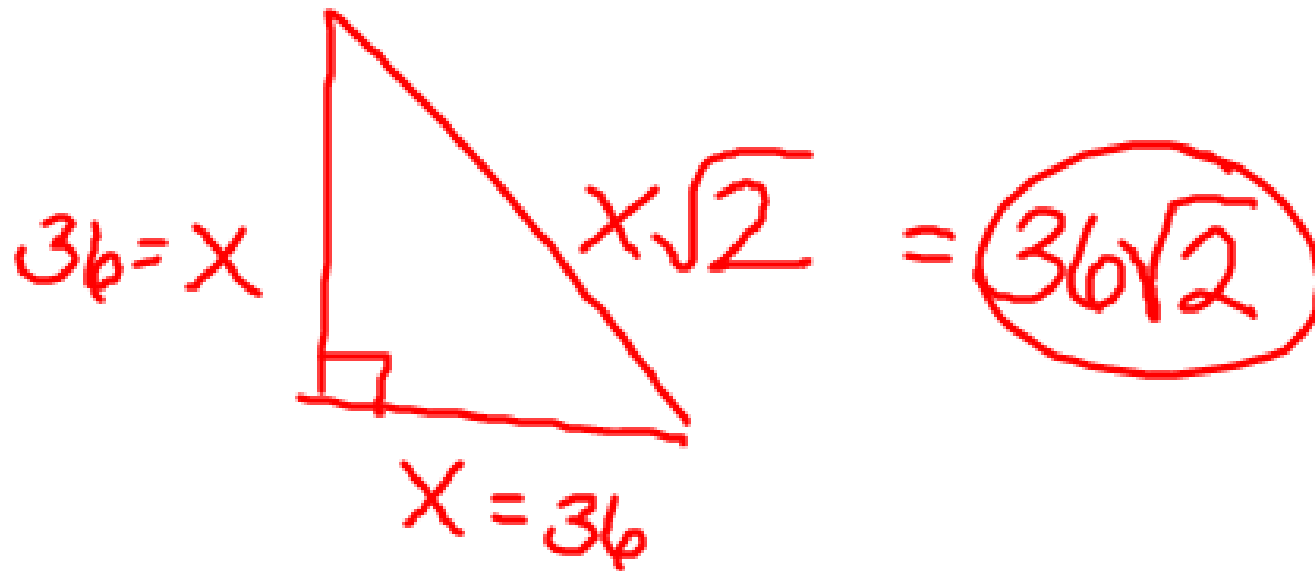


Find the lengths of the legs in the triangle.



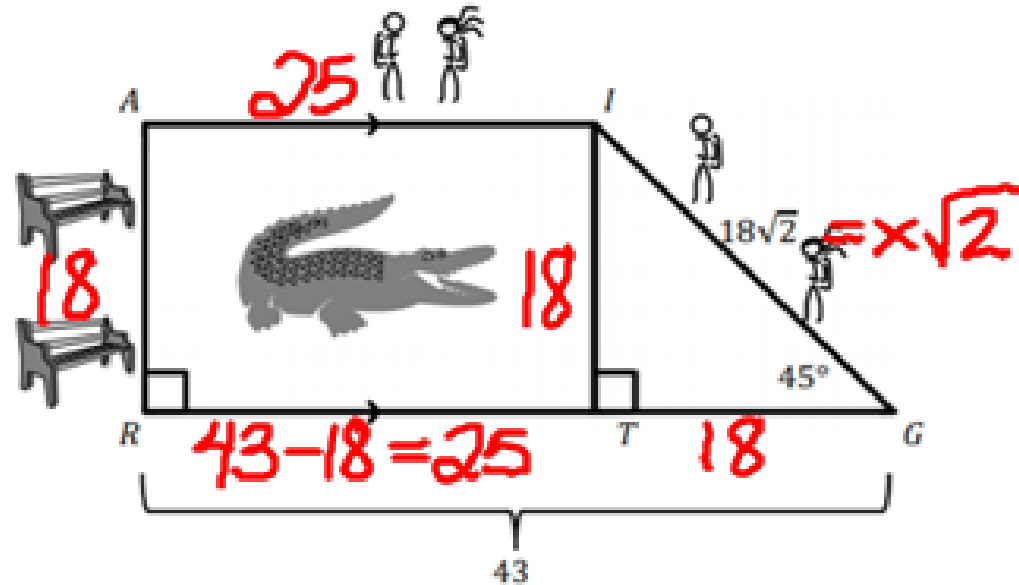
You try:

The Tilley household wants to build a patio deck in the shape of a  $45^\circ - 45^\circ - 90^\circ$  triangle in a nice corner section of their backyard. They have enough room for a triangular deck with a leg measuring 36 feet. What will the length of the longest side be?



## BEAT THE TEST!

1. Consider the drawing below.

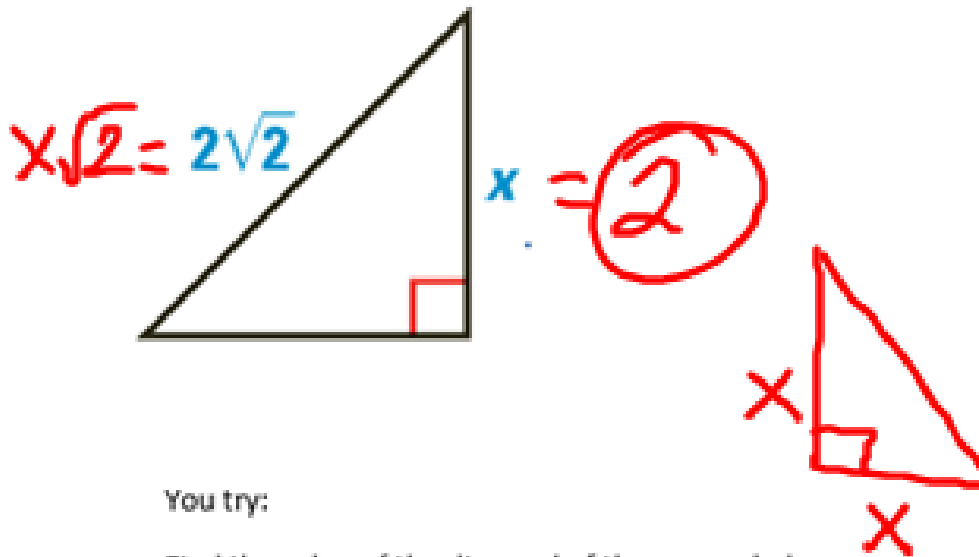


Part A: What is the perimeter of the figure?

$$43 + 18 + 25 + 18\sqrt{2}$$
$$86 + 18\sqrt{2} \approx 111.5$$

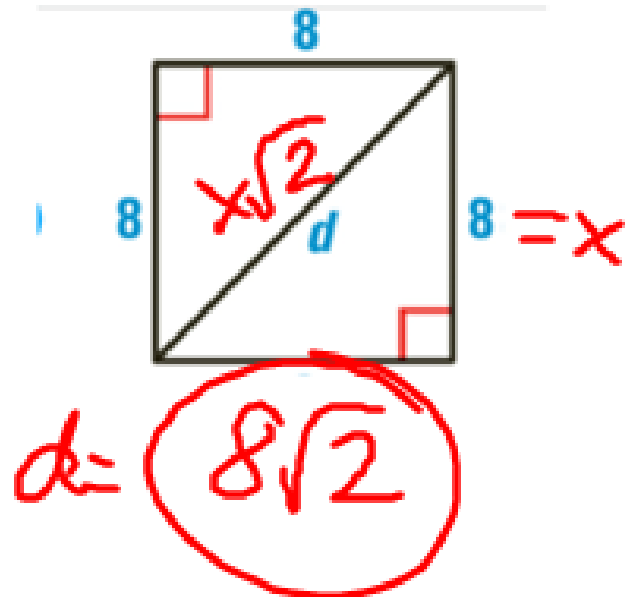
Part B: Write a 3-sentence long short story about the drawing and the calculations made in Part A.

You try. Find the value of x on this Isosceles Right Triangle.



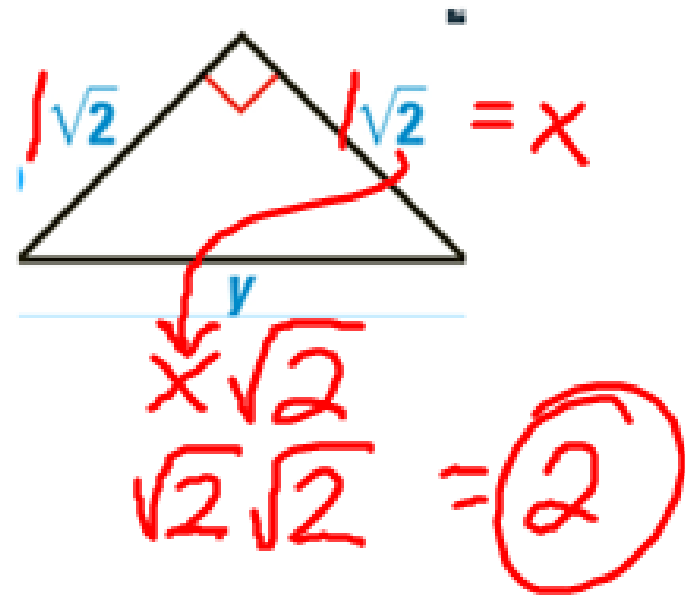
You try:

Find the value of the diagonal of the square below.



You try:

Find the value of y on this Right Isosceles Triangle





$$x = 5\sqrt{2}$$

$$x^2 + x^2 = 10^2$$

$$2x^2 = 100$$

$$\frac{2}{2}x^2 = \frac{100}{2}$$

$$\sqrt{x^2} = \sqrt{50}$$

$$\sqrt{2}$$

$$\frac{\sqrt{25}}{5}$$

$$\frac{10}{\sqrt{2}} = \frac{x\sqrt{2}}{\sqrt{2}}$$

$$\frac{\sqrt{2} \cdot 10}{\sqrt{2} \cdot \sqrt{2}} = x$$

$$\frac{10\sqrt{2}}{2} = 5\sqrt{2}$$