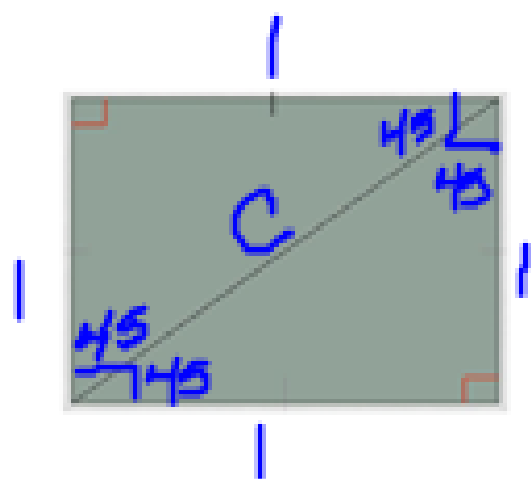


Special Right Triangles

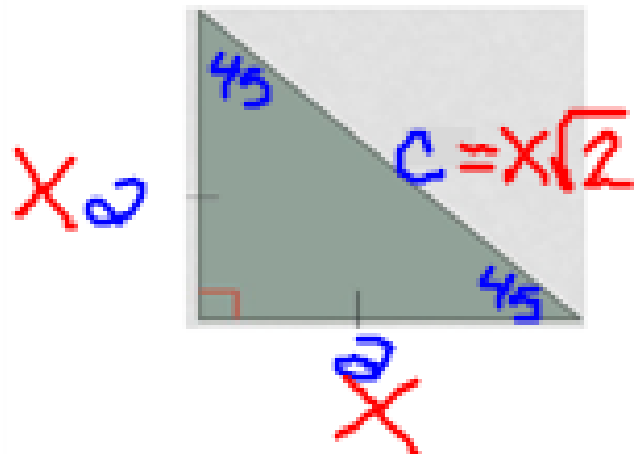


$$1^2 + 1^2 = c^2$$

$$1 + 1 = c^2$$

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

$$\sqrt{2} = c \quad c = 1\sqrt{2}$$



$$2^2 + 2^2 = c^2$$

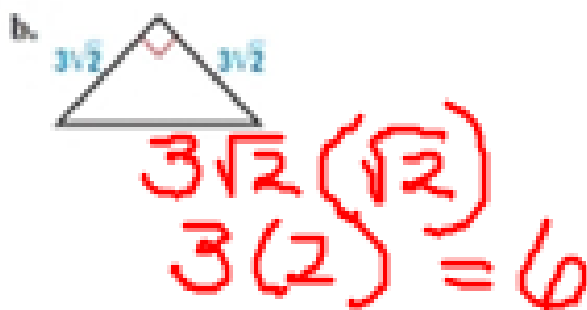
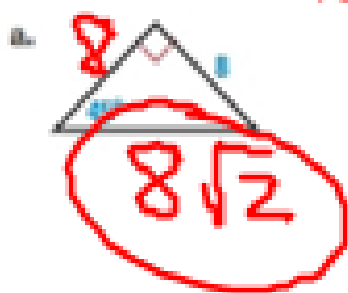
$$4 + 4 = c^2$$

$$\sqrt{8} = \sqrt{c^2}$$

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

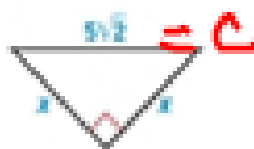
$\sqrt{2} \quad \sqrt{2}$ (circled)

Find the length of the hypotenuse.

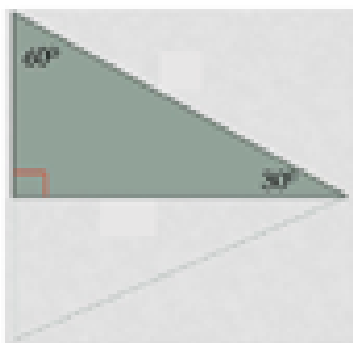
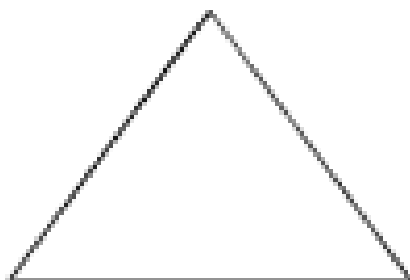


Find the lengths of the legs in the triangle.

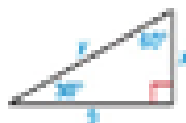
$$C = x\sqrt{2}$$
$$5\sqrt{2} = x\sqrt{2}$$



$$x = 5$$

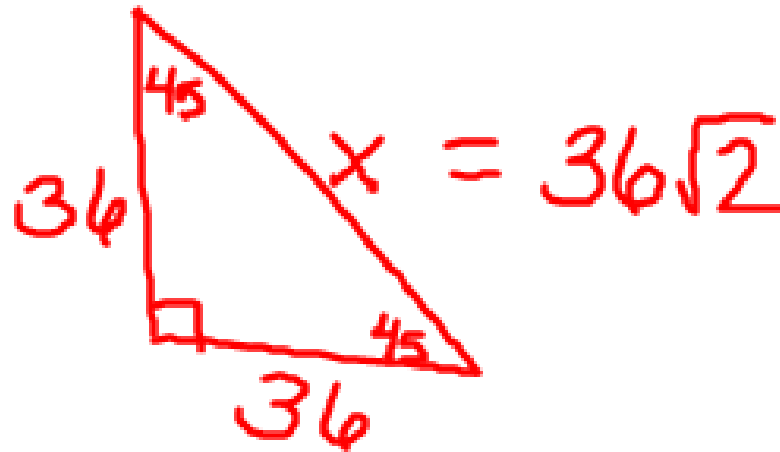


Find the values of x and y . Write your answer in simplest radical form.

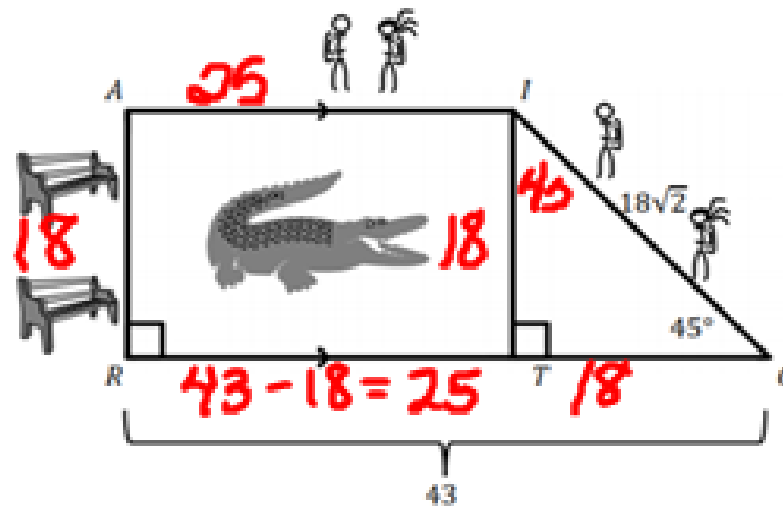


You try:

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?



1. Consider the drawing below.



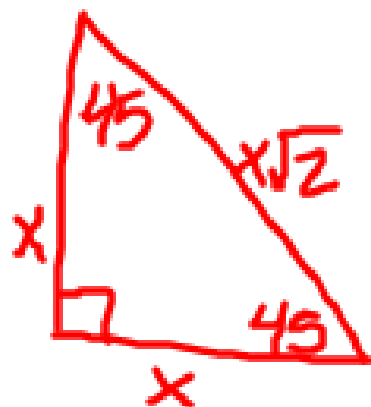
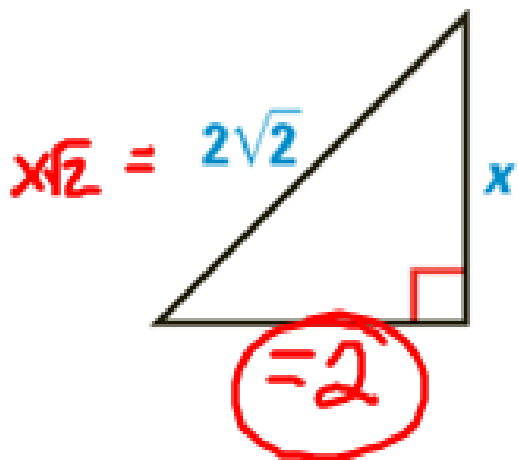
Part A: What is the perimeter of the figure?

$$18 + 25 + 18\sqrt{2} + 43$$

$$86 + 18\sqrt{2} \text{ or } 111.5$$

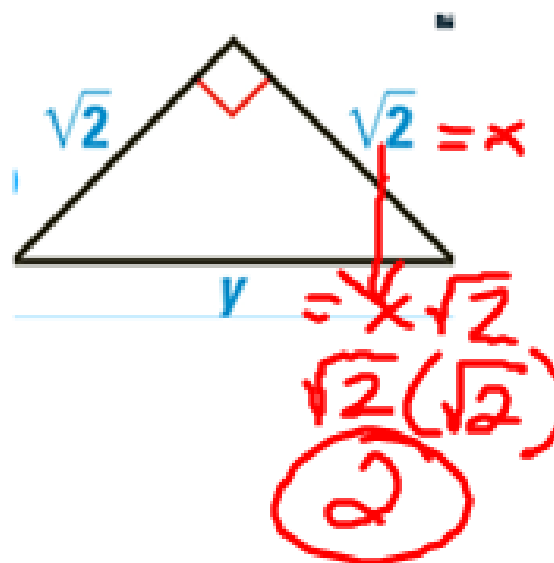
Part B: Write a 3-sentence long short story about the drawing and the calculations made in Part A.

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



You try:

Find the value of y on this Right Isosceles Triangle



You try:

Find the value of the diagonal of the square below.

