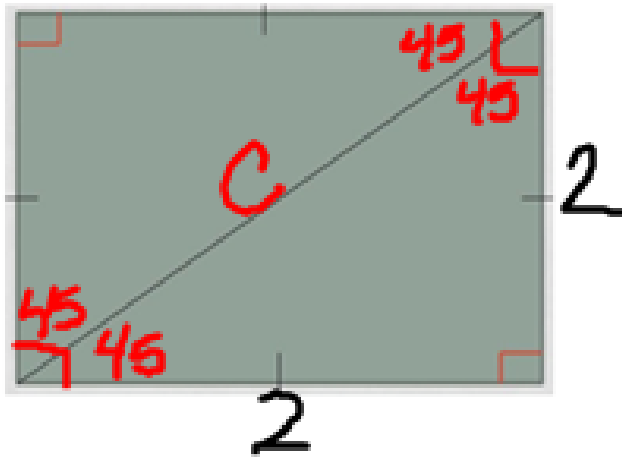


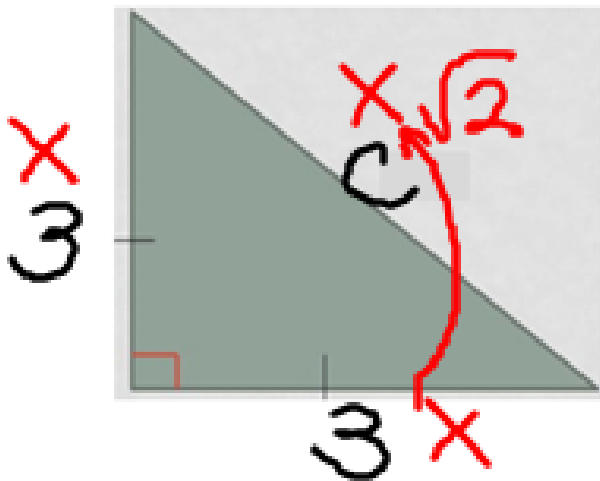
Special Right Triangles

45-45-90



$$2^2 + 2^2 = c^2$$
$$4 + 4 = c^2$$
$$\sqrt{8} = \sqrt{c^2}$$

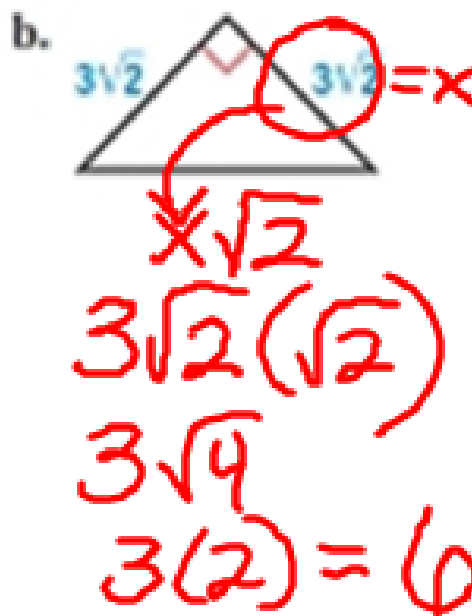
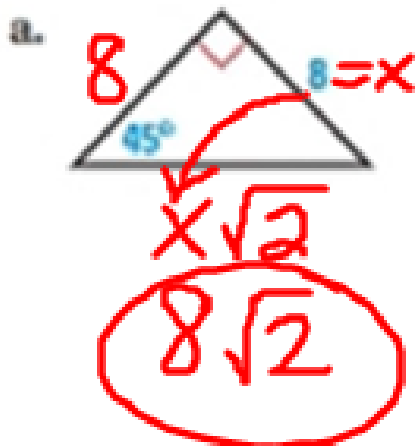
$$\sqrt{2} \sqrt{4} = \textcircled{2\sqrt{2}}$$



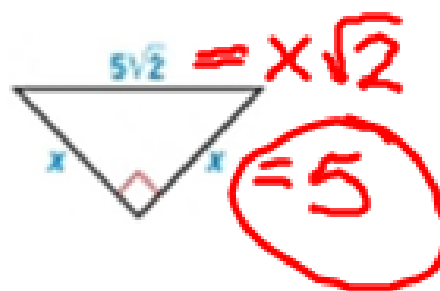
$$3^2 + 3^2 = c^2$$
$$9 + 9 = c^2$$
$$\sqrt{18} = \sqrt{c^2}$$

$$\sqrt{2} \sqrt{9} = \textcircled{3\sqrt{2}}$$

Find the length of the hypotenuse.

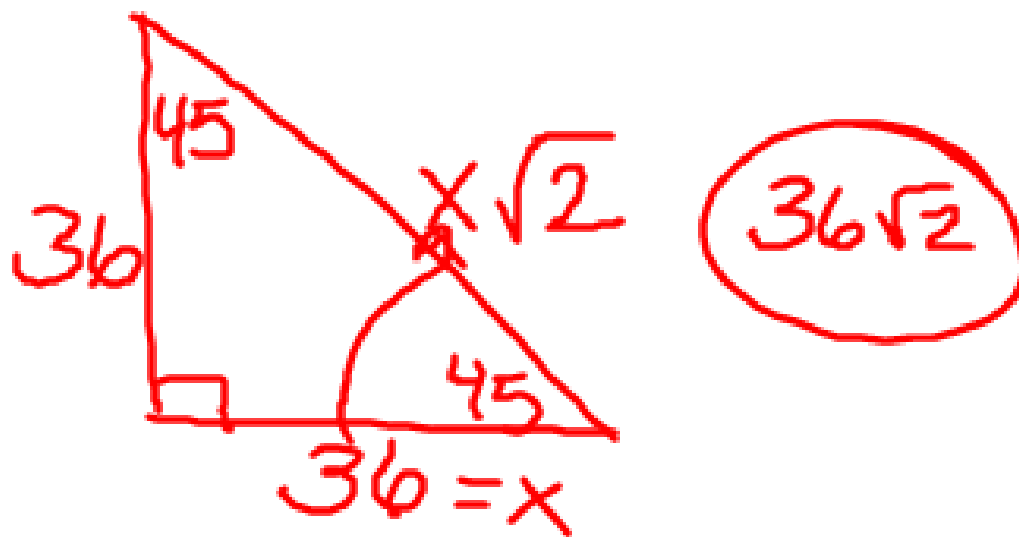


Find the lengths of the legs in the triangle.



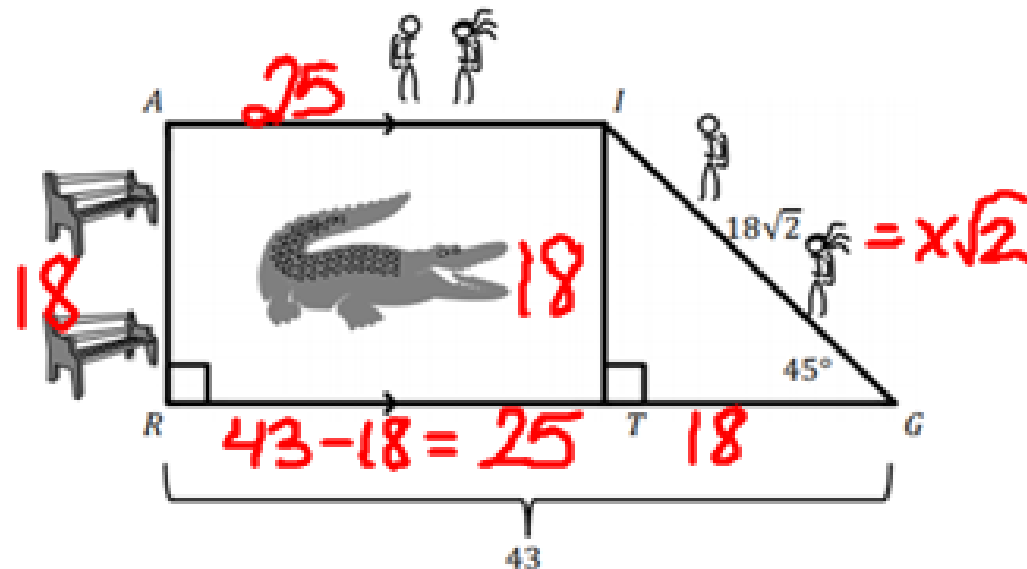
You try:

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.

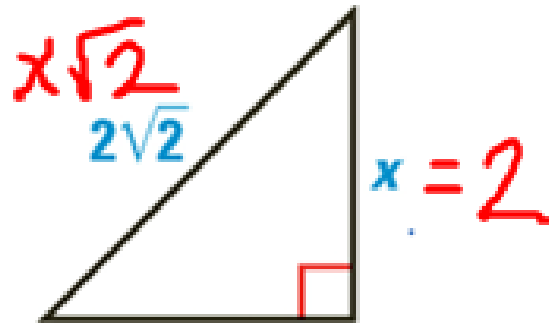


Part A: What is the perimeter of the figure?

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

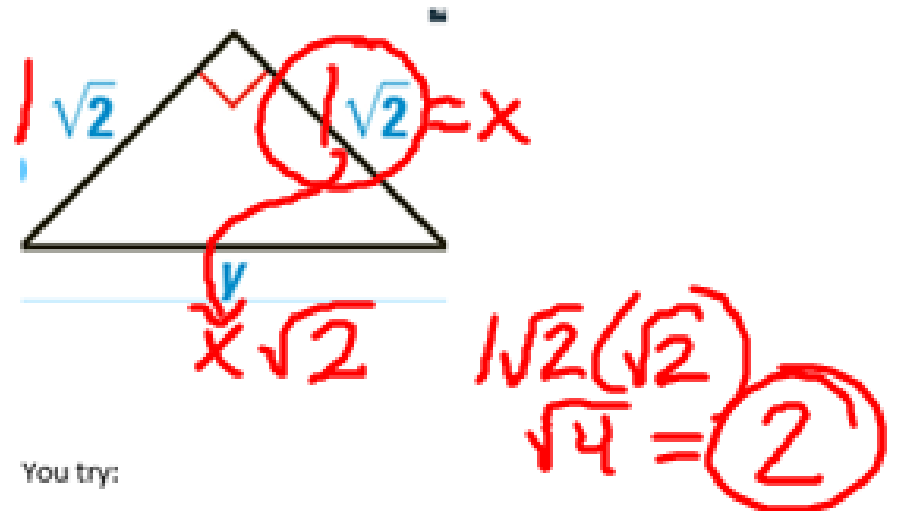
Part B: Write a 3 - sentence long short story about the drawing and the calculations made in Part A.

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



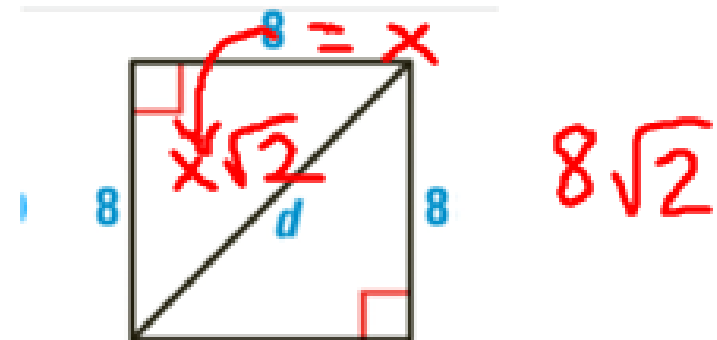
You try:

Find the value of y on this Right Isosceles Triangle

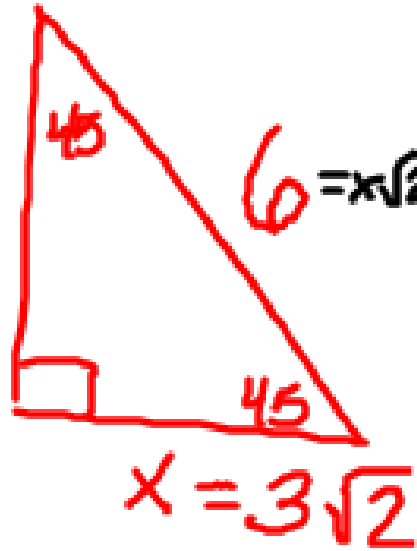


You try:

Find the value of the diagonal of the square below.



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



$$6 = x\sqrt{2}$$

$$\begin{aligned}x^2 + x^2 &= 6^2 \\2x^2 &= 36 \\ \frac{2x^2}{2} &= \frac{36}{2} \\ \sqrt{x^2} &= \sqrt{18} \\ &= \sqrt{2 \cdot 9} \\ &= \sqrt{2} \cdot \sqrt{9} \\ &= \sqrt{2} \cdot 3\end{aligned}$$

$$\frac{6}{\sqrt{2}} = \frac{x\sqrt{2}}{\sqrt{2}}$$

$$\sqrt{2} \cdot \frac{6}{\sqrt{2}} = x$$

$$\frac{6\sqrt{2}}{\sqrt{2}} = 3\sqrt{2}$$