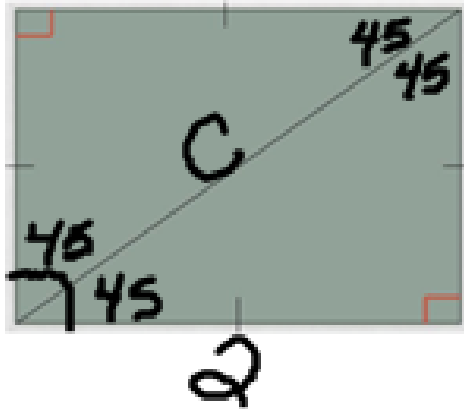
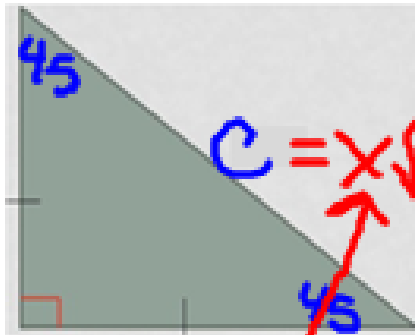


Special Right Triangles



$$45-45-90$$
$$2^2 + 2^2 = c^2$$
$$4 + 4 = c^2$$
$$\sqrt{8} = \sqrt{c^2}$$

$$\sqrt{2} \times \frac{\sqrt{4}}{2} = 2\sqrt{2}$$



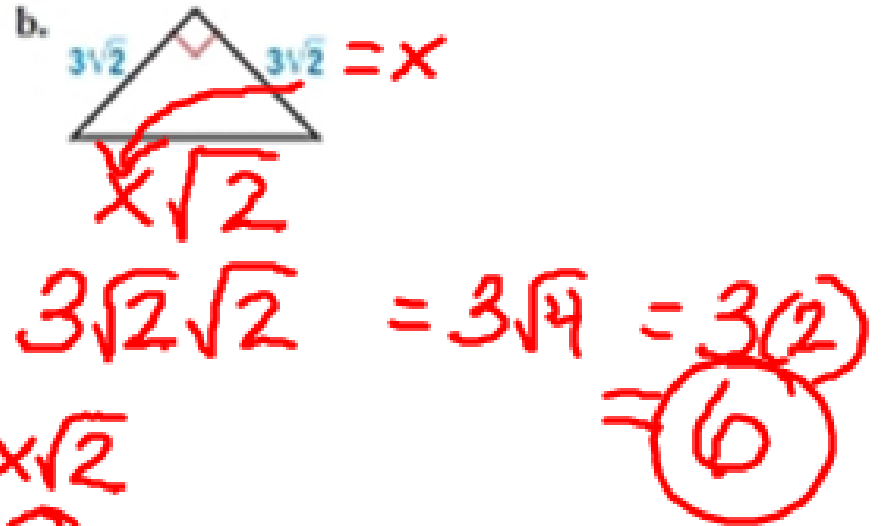
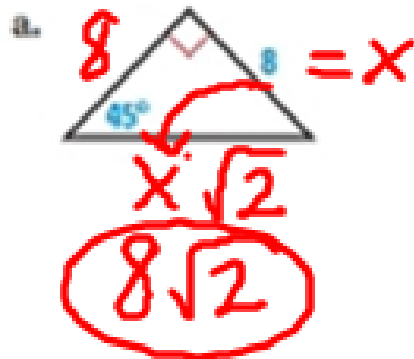
~~3~~

~~C = 3~~
~~3~~

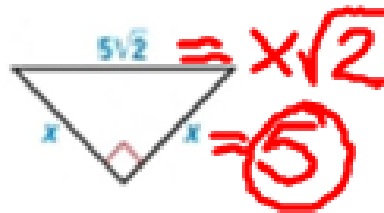
$$3^2 + 3^2 = c^2$$
$$9 + 9 = c^2$$
$$\sqrt{18} = \sqrt{c^2}$$

$$\sqrt{2} \times \frac{\sqrt{9}}{3} = 3\sqrt{2}$$

Find the length of the hypotenuse.

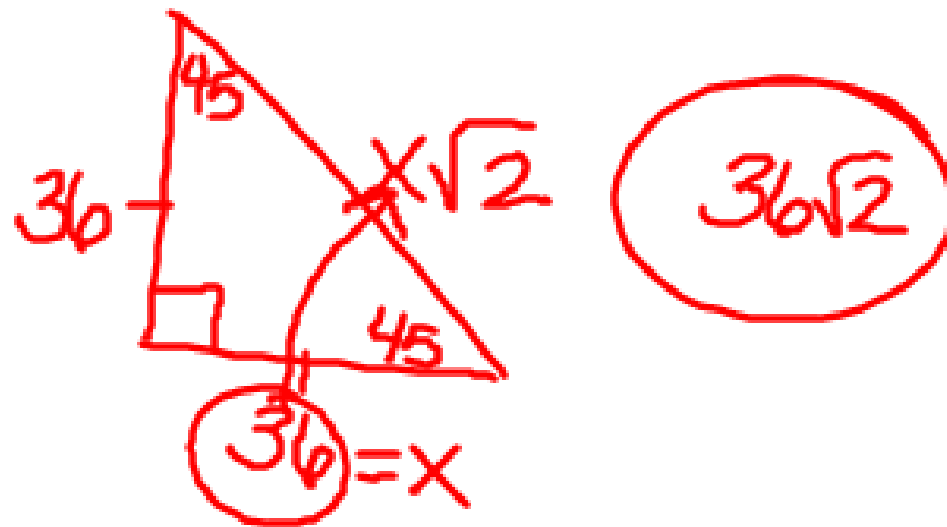


Find the lengths of the legs in the triangle.



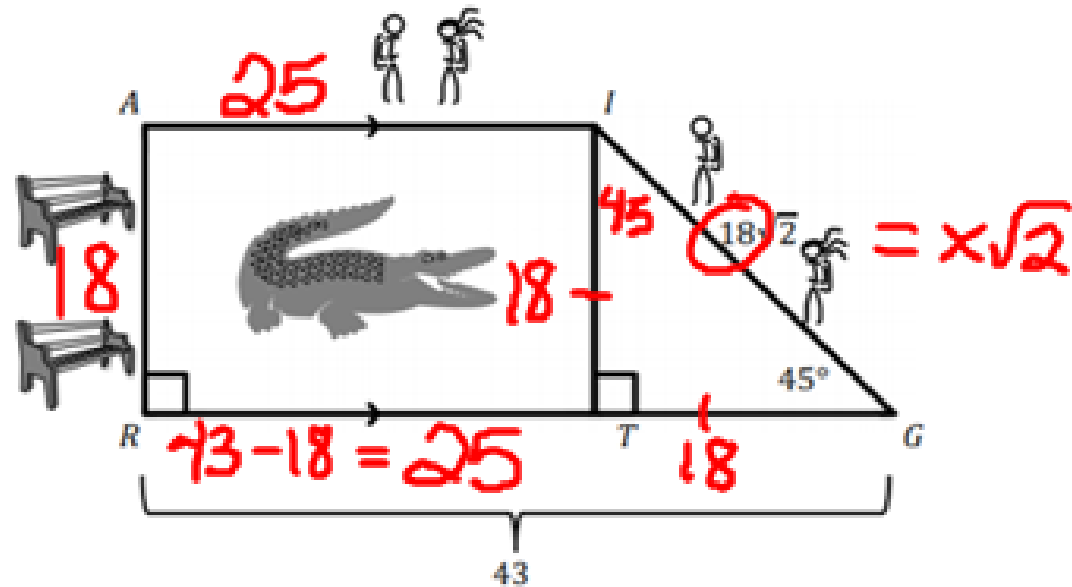
You try:

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.



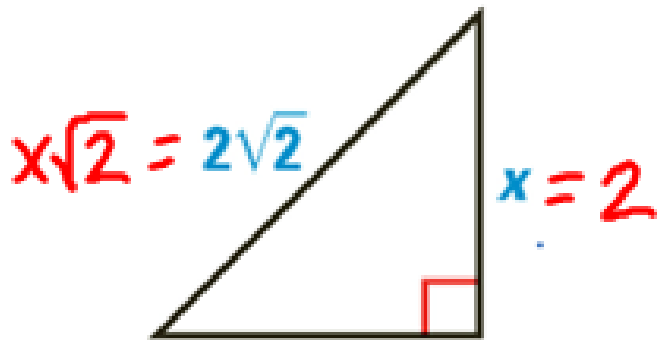
Part A: What is the perimeter of the figure?

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

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

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

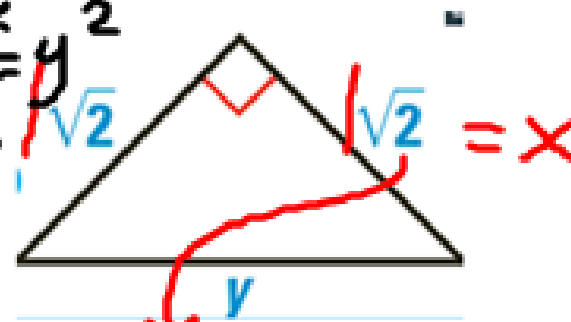
You try. Find the value of x on this Isosceles Right Triangle.



$$\begin{aligned} (\sqrt{2})^2 + (\sqrt{2})^2 &= y^2 \\ 2 + 2 &= y^2 \\ \sqrt{4} &= \sqrt{y^2} \\ 2 &= y \end{aligned}$$

You try:

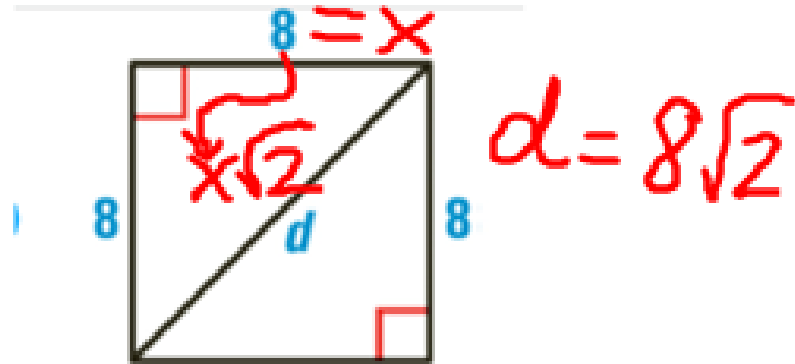
Find the value of y on this Right Isosceles Triangle

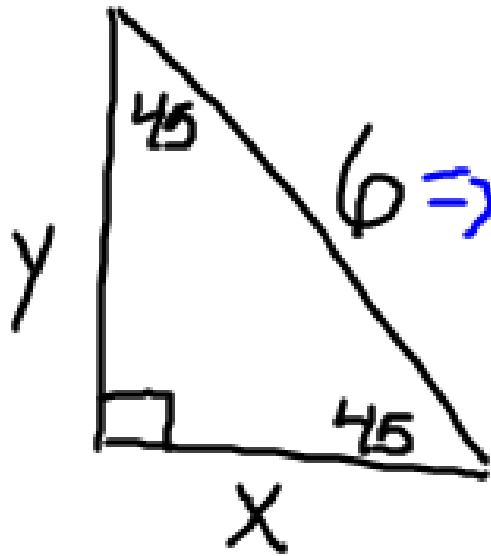


$$\begin{aligned} x\sqrt{2} \\ \sqrt{2}\sqrt{2} &= \sqrt{4} \\ &= 2 \end{aligned}$$

You try:

Find the value of the diagonal of the square below.





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

$$x^2 + x^2 = 6^2$$

$$2x^2 = 36$$

$$\sqrt{x^2} = \sqrt{\frac{36}{2}}$$

$$\sqrt{18} = \sqrt{9 \cdot 2}$$

$$3\sqrt{2}$$

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

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

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