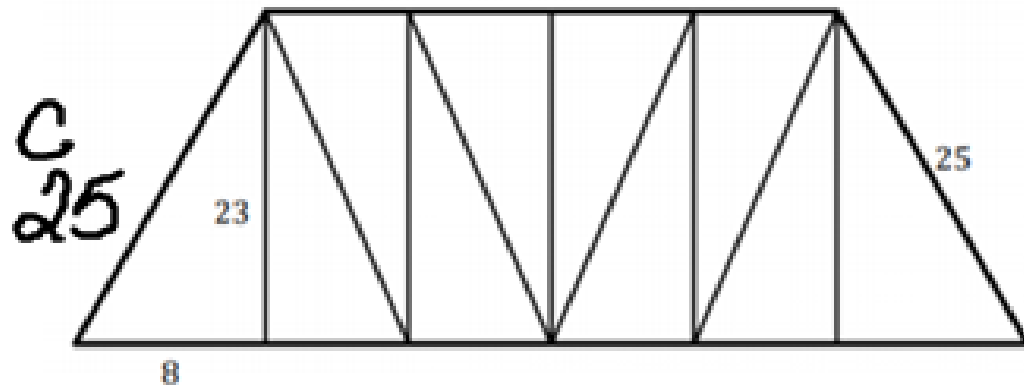


2. Mr. Chris designed a Pratt Truss bridge with a structure that slanted towards the center of the bridge. In order to be a Pratt Truss bridge, the bridge has to contain right triangles in its design. However, his design was rejected by the construction firm. The firm said that Mr. Chris's design failed to meet the Pratt Truss requirements.



- a. Consider the above representation of the bridge Mr. Chris designed. Prove that the construction firm was correct in its rejection of Mr. Chris's design.

$$8^2 + 23^2 \stackrel{?}{=} 25^2$$

$$64 + 529 \stackrel{?}{=} 625$$

$$593 \neq 625$$

- b. What options does Mr. Chris have to fix the design? Justify your answer.

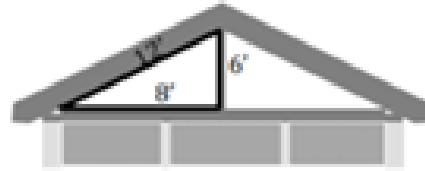
Change 23 to 24
Change 8 to 7

using the triple
7, 24, 25

You try!

1. Clay designs roofs that form 2 congruent right triangles. His designs are flawless. He submitted his latest design to a firm along with three other contractors, and the firm selected Clay's plan. Which of the following designs is Clay's design?

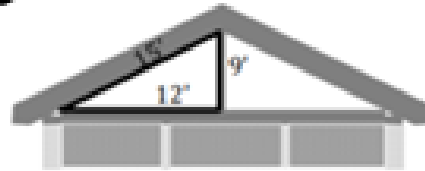
A



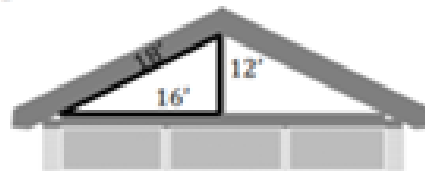
B



C



D



$$\begin{aligned}8^2 + 6^2 & \stackrel{?}{=} 12^2 \\ 64 + 36 & \stackrel{?}{=} 144 \\ 100 & \neq 144 \\ 11^2 + 7^2 & \stackrel{?}{=} 13^2 \\ 121 + 49 & \stackrel{?}{=} 169 \\ 170 & \neq 169 \\ 12^2 + 9^2 & \stackrel{?}{=} 15^2 \\ 144 + 81 & = 225\end{aligned}$$

Using the Pythagorean Theorem, how can you tell if the triangle is acute or obtuse?

If $a^2 + b^2 = c^2$, then the triangle is a Right triangle.

If $a^2 + b^2 < c^2$, then the triangle is an obtuse triangle.

If $a^2 + b^2 > c^2$, then the triangle is an acute triangle.

Let's Practice

Classify the triangle by the angle degree; right, acute, or obtuse.

4, 5, 7 $4^2 + 5^2$ 7^2 $41 < 49$
 $16 + 25$ 49 Obtuse

9, 10, 12 $9^2 + 10^2$ 12^2 $181 > 144$
 $81 + 100$ 144 Acute

12, 16, 20 $12^2 + 16^2$ 20^2
 $144 + 256$ 400
 $400 = 400$ Right