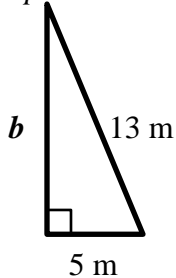




### Pythagorean Theorem: Finding the Length of a Leg (page 1)

Find the missing length of each triangle.

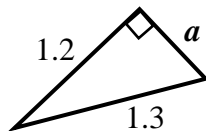
Example A



$$\begin{aligned}
 a^2 + b^2 &= c^2 && \text{Write the Pythagorean Theorem} \\
 5^2 + b^2 &= 13^2 && \text{Substitute 5 for } a \text{ and 13 for } c \\
 25 + b^2 &= 169 && \text{Evaluate} \\
 -25 &= -25 && \text{Subtract 25 from both sides} \\
 b^2 &= 144 && \\
 \sqrt{b^2} &= \sqrt{144} && \text{Take positive square root of each side} \\
 b &= 12 && \text{Simplify}
 \end{aligned}$$

Therefore, the length of the missing side **b** is 12 meters.

Example B



$$\begin{aligned}
 a^2 + b^2 &= c^2 && \text{Write the Pythagorean Theorem} \\
 a^2 + (1.2)^2 &= (1.3)^2 && \text{Substitute 1.2 for } b \text{ and 1.3 for } c \\
 a^2 + 1.44 &= 1.69 && \text{Evaluate} \\
 -1.44 &= -1.44 && \text{Subtract 1.44 from both sides} \\
 a^2 &= 0.25 && \\
 \sqrt{a^2} &= \sqrt{0.25} && \text{Take positive square root of each side} \\
 a &= 0.5 && \text{Simplify}
 \end{aligned}$$

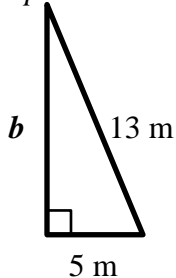
Therefore, the length of the missing side **a** is 0.5 units.



### Pythagorean Theorem: Finding the Length of a Leg (page 1)

Find the missing length of each triangle.

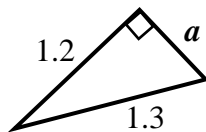
Example A



$$\begin{aligned}
 a^2 + b^2 &= c^2 && \text{Write the Pythagorean Theorem} \\
 5^2 + b^2 &= 13^2 && \text{Substitute 5 for } a \text{ and 13 for } c \\
 25 + b^2 &= 169 && \text{Evaluate} \\
 -25 &= -25 && \text{Subtract 25 from both sides} \\
 b^2 &= 144 && \\
 \sqrt{b^2} &= \sqrt{144} && \text{Take positive square root of each side} \\
 b &= 12 && \text{Simplify}
 \end{aligned}$$

Therefore, the length of the missing side **b** is 12 meters.

Example B



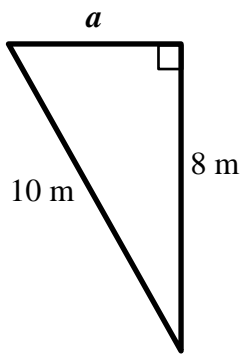
$$\begin{aligned}
 a^2 + b^2 &= c^2 && \text{Write the Pythagorean Theorem} \\
 a^2 + (1.2)^2 &= (1.3)^2 && \text{Substitute 1.2 for } b \text{ and 1.3 for } c \\
 a^2 + 1.44 &= 1.69 && \text{Evaluate} \\
 -1.44 &= -1.44 && \text{Subtract 1.44 from both sides} \\
 a^2 &= 0.25 && \\
 \sqrt{a^2} &= \sqrt{0.25} && \text{Take positive square root of each side} \\
 a &= 0.5 && \text{Simplify}
 \end{aligned}$$

Therefore, the length of the missing side **a** is 0.5 units.

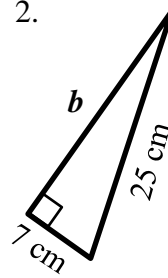
### Pythagorean Theorem: Finding the Length of a Leg (page 2)

Find the missing length of each triangle.

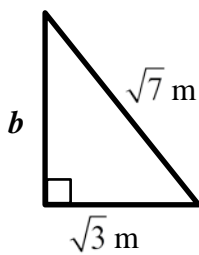
1.



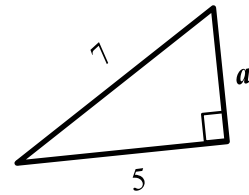
2.



3.



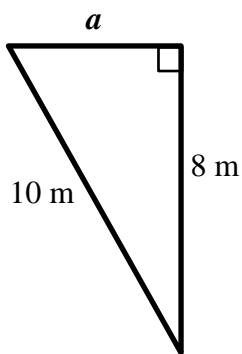
4.



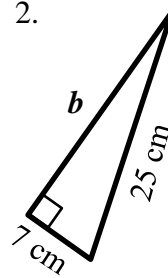
### Pythagorean Theorem: Finding the Length of a Leg (page 2)

Find the missing length of each triangle.

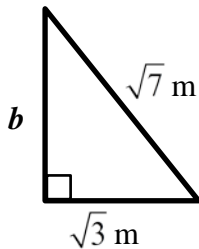
1.



2.



3.



4.

