Cornell Notes	Topic: M7 L7 The Pythagorean Theorem	Name:
AVID Decades of College Dreams	8.G.B Understand and apply the Pythagorean Theorem. 8.G.B.6: Understand the Pythagorean Theorem and its converse. 8.G.B.7: Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world context and mathematical problems in two and three dimensions. 8.G.B.8: Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.	Class/Period: Date:

Learning Target: I can

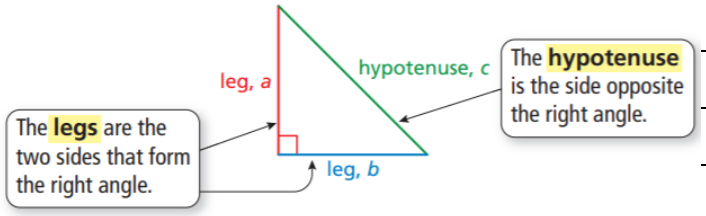
Questions:

Notes:

Key Ideas

Sides of a Right Triangle

The sides of a right triangle have special names.



The Pythagorean Theorem

Words In any right triangle, the sum of the squares of the lengths of the legs is equal to the square of the length of the hypotenuse.

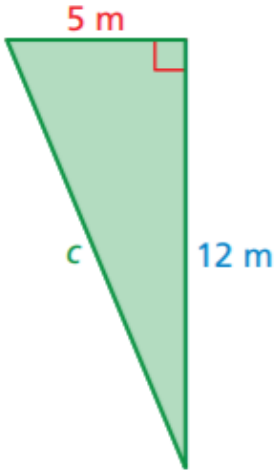
Algebra $a^2 + b^2 = c^2$

Study Tip

In a right triangle, the legs are the shorter sides and the hypotenuse is always the longest side.

1 Finding the Length of a Hypotenuse

Find the length of the hypotenuse of the triangle.



$a^2 + b^2 = c^2$ Write the Pythagorean Theorem.

$\square + \square = c^2$ Substitute 5 for a and 12 for b.

$\square + \square = c^2$ Evaluate powers.

$\square = c^2$ Add.

$\sqrt{\square} = \sqrt{c^2}$ Take positive square root of each side.

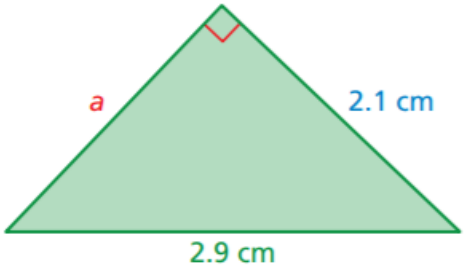
$\square = c$ Simplify.

∴ The length of the hypotenuse is $\square$ meters.

Questions:

2 Finding the Length of a Leg

Find the missing length of the triangle.



$a^2 + b^2 = c^2$ — Write the Pythagorean Theorem.

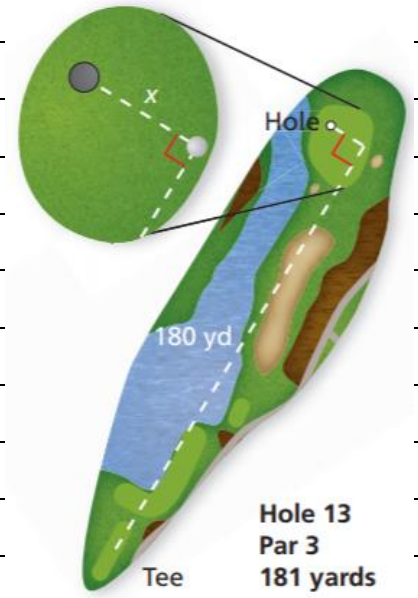
$a^2 + \square^2 = \square^2$ — Substitute 2.1 for b and 2.9 for c.

$a^2 + \square = \square$ — Evaluate powers.

$a^2 = \square$ — Subtract 4.41 from each side.

$a = \square$ — Take ____ of each side.

3 Real-Life Application



GOLF The figure shows the location of a golf ball after a tee shot. How many feet from the hole is the ball?

On Your Own **TREE SUPPORT** How long is the wire that supports the tree?

M7 L7 Classwork

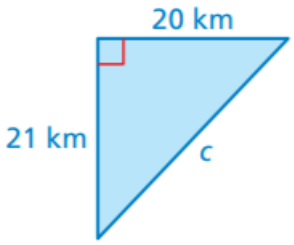
Partner A Name:_____ Partner B Name: _____Cohort:___

Partner A do odd number questions

Partner B do even number questions

Find the missing length of the triangle.

3.



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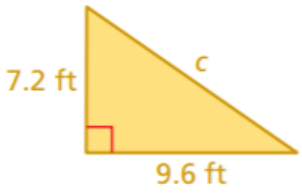

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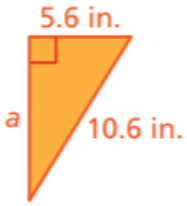

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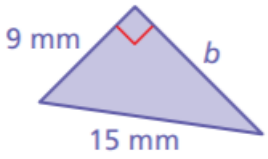

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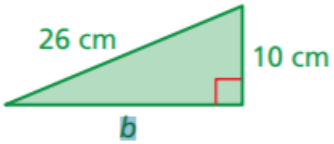

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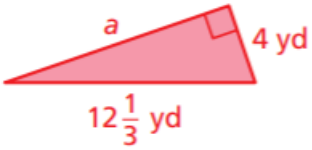
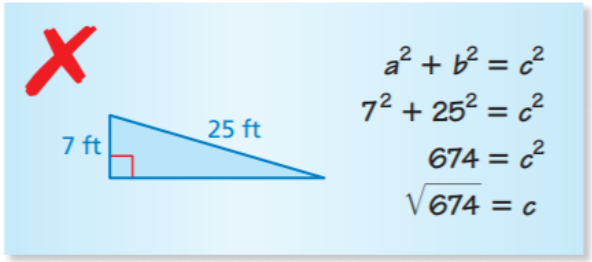
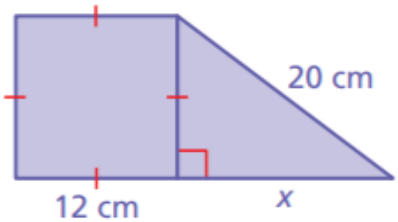


9. ERROR ANALYSIS Describe and correct the error in finding the missing length of the triangle.



Find the missing length of the figure.

11.



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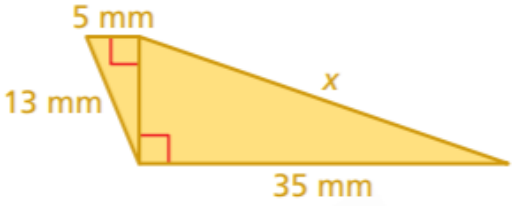


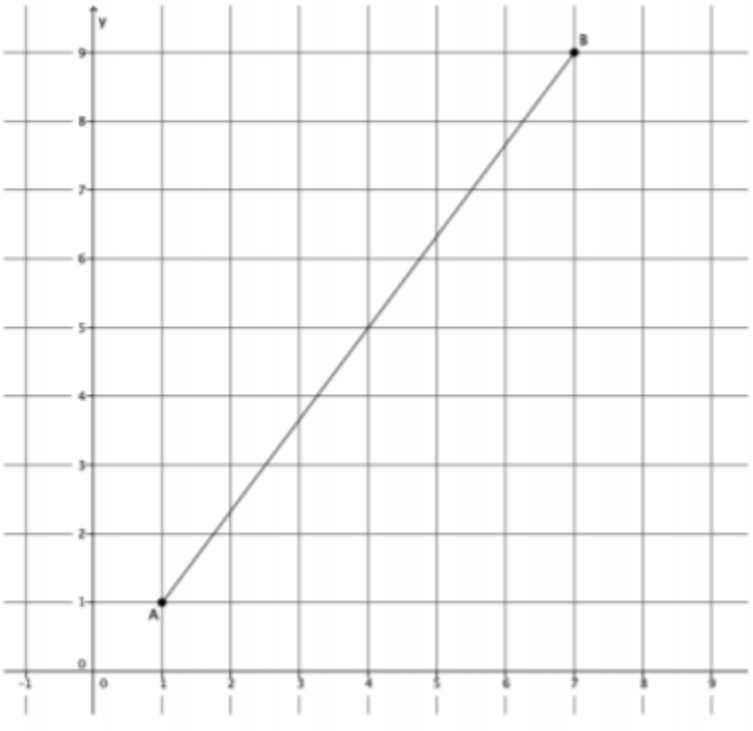
M7 L7 Classwork

Partner A Name:_____ Partner B Name: _____Cohort:___

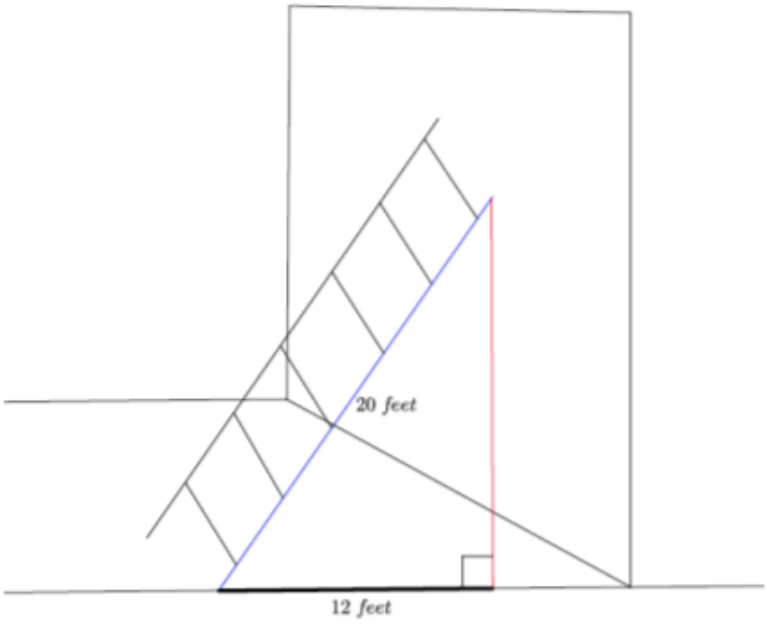
Partner A do odd number questions

Partner B do even number questions

1. Find the length of the segment AB shown below, if possible.



2. A 20-foot ladder is placed 12 feet from the wall, as shown. How high up the wall will the ladder reach?

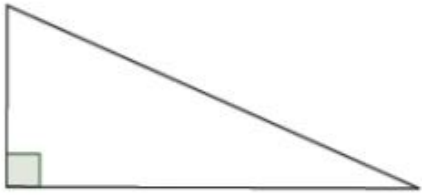


M7 L7 The Pythagorean Theorem Exit Ticket

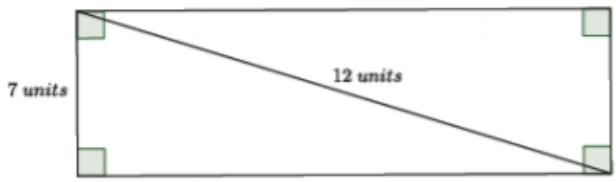
Name:_____ Cohort:___

Exit Ticket

1. Label the sides of the right triangle with leg, leg, and hypotenuse.



1. Find the length of the missing side of the rectangle shown below, if possible.



2. Find the length of all three sides of the right triangle shown below, if possible.