

Geometry B Live Lesson Class

U3L1 - The Pythagorean Theorem and Its
Converse
(Ch. 8-1 in textbook)



Agenda



1. Review topics and problems from Unit 3, Lesson 1.

2. Use the 2-column note system to take better notes in math class. Bring your math notebook and pen or pencil to each math LiveLesson class.

2-Column Notes Template



1. Announcements/To Do's
2. School-Wide Learner Outcomes
3. LL Objectives
4. Vocabulary words
5. Problems
6. Summary (End of class)

1. Write down important details.
2. What are you going to work on this week?
- 3.
4. Definitions (fill in as we go)
5. Steps to solving problems
6. 1 or 2 sentences about the LL class.

Reminders and To – Do's



Information

1. Complete 1 math lesson per day.
2. Check your WebMail every day
3. Be prepared to spend 4 - 6 hours per day on schoolwork.
4. Remind your Learning Coach to take daily attendance

What to do

1. Go to your Planner in Connexus to find the math lesson for the day
2. Go to Connexus to find WebMail
3. Complete lessons for the day from your Planner. Do not get behind on lessons.
4. Have your Learning Coach log into Connexus daily.

Reminders and To – Do's



Information

5. Go to the Message Board first for information about our math class.

6. Contact Mr. Elizondo for math questions.

Remember: You need at least 2 phone calls with Mr. Elizondo per semester.

What to do

6. Call (559) 549 - 3244 and leave a voicemail if call is not answered.

Make an appointment at:
<https://elizondo.youcanbook.me>

Send a WebMail

U3L1 – California Common Core State Standards



- HSG-SRT.C.8: Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.

U3L1 – Objectives



- Use the Pythagorean Theorem and its converse

U3L1 – Vocabulary



- Pythagorean Theorem

U3L1 – The Pythagorean Theorem and Its Converse

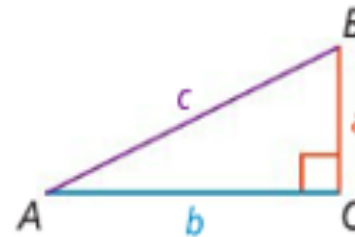


Pythagorean Theorem

If a triangle is a right triangle, then the sum of the squares of the lengths of the legs is equal to the square of the length of the hypotenuse.

If ...

$\triangle ABC$ is a right triangle



Then ...

$$(\text{leg}_1)^2 + (\text{leg}_2)^2 = (\text{hypotenuse})^2$$

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

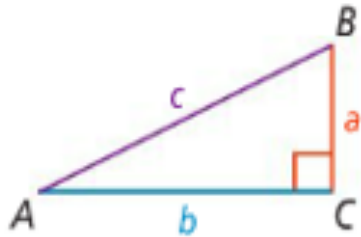
U3L1 – The Pythagorean Theorem and Its Converse



Pythagorean Theorem

If ...

$\triangle ABC$ is a right triangle

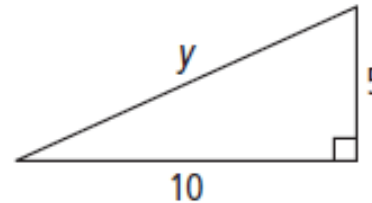


Then ...

$(\text{leg}_1)^2 + (\text{leg}_2)^2 = (\text{hypotenuse})^2$

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

Find the value of y . Express your answer in simplest radical form.

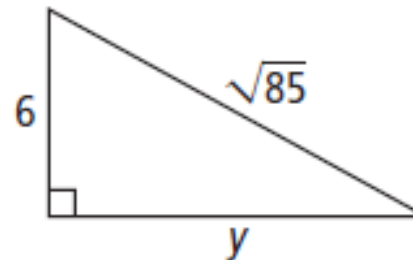


$$5^2 + 10^2 = y^2$$

$$25 + 100 = y^2$$

$$125 = y^2$$

$$y = 5\sqrt{5}$$



$$y^2 + 6^2 = (\sqrt{85})^2$$

$$y^2 + 36 = 85$$

$$y^2 + 36 = 85$$

$$y^2 = 49$$

$$y = 7$$

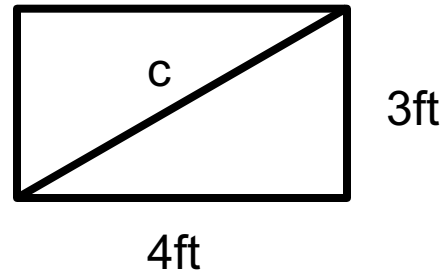
U3L1 – Pythagorean Triple



Pythagorean Triple

A set of nonzero whole numbers a , b , and c that satisfy the equation $a^2 + b^2 = c^2$

A rectangle has side lengths of 3 ft and 4 ft. What is the length of its diagonal?



$$3^2 + 4^2 = c^2$$

$$9 + 16 = c^2$$

$$25 = c^2$$

$$y = 5$$

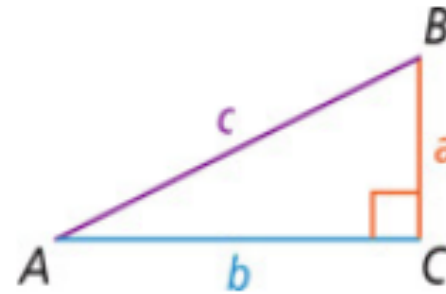
U3L1 – Converse Pythagorean Theorem



If the sum of the squares of the lengths of two sides of a triangle is equal to the square of the length of the third side, then the triangle is a right triangle.

If ...

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



Then ...

$\triangle ABC$ is a right triangle

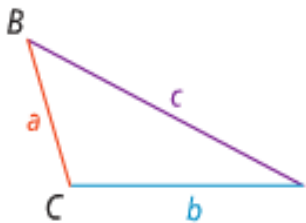
U3L1 – More Theorems



Theorem 8-3

If ...

$$c^2 > a^2 + b^2$$



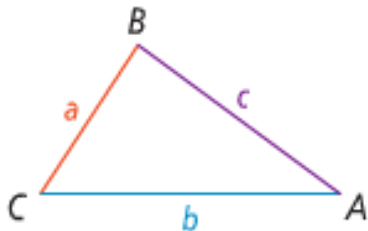
Then ...

$\triangle ABC$ is obtuse

Theorem 8-4

If ...

$$c^2 < a^2 + b^2$$



Then ...

$\triangle ABC$ is acute

Given the following triangle side lengths, classify the triangle as acute, right, or obtuse.

Triangle sides are 7, 8, 9

$$7^2 + 8^2 = 9^2$$

$$49 + 64 = 81$$

$$113 > 81 \quad \text{Acute}$$

Triangle sides are 6, 11, 14

$$6^2 + 11^2 = 14^2$$

$$36 + 121 = 196$$

$$157 < 196 \quad \text{Obtuse}$$

Triangle sides are 10, 24, 26

$$10^2 + 24^2 = 26^2$$

$$100 + 576 = 676$$

$$676 = 676 \quad \text{Right}$$

Questions?



- Check the Message Board first
- Send a WebMail
- You can also make an appointment at <https://elizondo.youcanbook.me>
- You can also call me at (559) 549-3244. If I'm not available to answer your call, please leave a voicemail with your full name and phone number.