Unit 8, Lesson 12

More Applications of the Pythagorean Theorem

Let's solve problems using the Pythagorean Theorem.

12.1 Pythagorean Triples

A Pythagorean triple is a set of three integers a, b, and c where $a^2 + b^2 = c^2$. An example of a Pythagorean triple is 3, 4, and 5 because $3^2 + 4^2 = 5^2$. Find other Pythagorean triples.

12.2 Info Gap: Pythagorean Theorem

Your teacher will give you either a problem card or a data card. Do not show or read your card to your partner.

If your teacher gives you the problem card:

1. Silently read your card and think about what information you need to answer the question.
2. Ask your partner for the specific information that you need. "Can you tell me _____?"
3. Explain to your partner how you are using the information to solve the problem. "I need to know _____ because . . . ."

   Continue to ask questions until you have enough information to solve the problem.
4. Once you have enough information, share the problem card with your partner, and solve the problem independently.
5. Read the data card, and discuss your reasoning.

If your teacher gives you the data card:

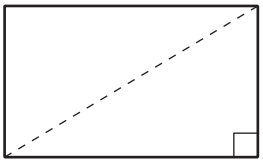
1. Silently read your card. Wait for your partner to ask for information.
2. Before telling your partner any information, ask, "Why do you need to know _____?"
3. Listen to your partner's reasoning and ask clarifying questions. Only give information that is on your card. Do not figure out anything for your partner!

   These steps may be repeated.
4. Once your partner says they have enough information to solve the problem, read the problem card, and solve the problem independently.
5. Share the data card, and discuss your reasoning.

Lesson 12 Summary

The Pythagorean Theorem can be used to find one side of a right triangle when you know the lengths of the other two sides. Sometimes the right triangle is not always obvious.

For example, if Kiran is trying to hang decorations from one corner of her rectangular classroom to the opposite corner, drawing in a diagonal helps to show how two right triangles are formed.



Consider these other figures and how a right triangle could be used to solve related problems.