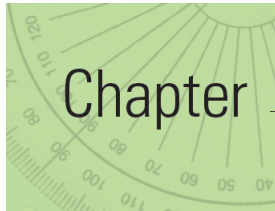


GMF 10

Chapter 8 intro. and Lesson 8.1 (1)

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8

Trigonometry of Right Triangles



This man is installing an angle brace. By incorporating right triangles, angle braces provide support and strength to bookshelves, building roofs, and beyond.

Nov 29-2:19 PM

What are some measurements that have to be made indirectly?

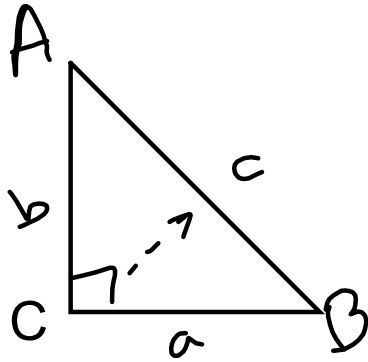
- Circumference of the Earth
- Distance through a mountain
- Distance across a lake
- Height of a tree

**Using right triangles some of these can be more easily measured. Trigonometry can help.

Nov 29-2:45 PM

REVIEW: WORKING WITH TRIANGLES

Each vertex of a triangle is labelled with an upper case letter, and each side is labelled either with the lower case letter corresponding to the opposite vertex or with the upper case letters of the vertices it connects.



Apr 4-10:57 AM

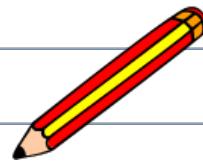
8.1

The Pythagorean Theorem

In a right triangle (only a right triangle)

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

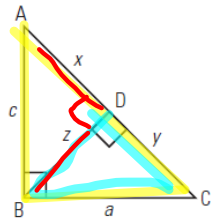
where 'c' is the hypotenuse (longest side) and 'a' and 'b' are the legs.



Feb 13-4:41 PM

BUILD YOUR SKILLS

3. Given the following diagram, use the lettering provided to state three Pythagorean relations that apply.



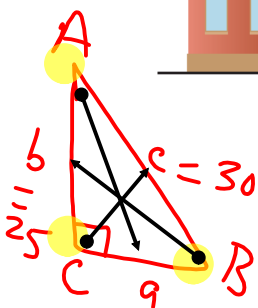
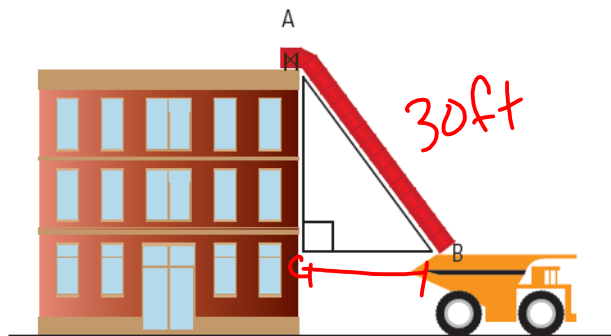
$$a^2 + c^2 = (x+y)^2$$

$$y^2 + z^2 = a^2$$

$$x^2 + z^2 = c^2$$

Apr 4-11:00 AM

In the diagram shown, if \overline{AB} is 30 ft, and \overline{AC} is 25 ft, approximately how far from the building is the back of the truck?



$$9^2 = c^2 - b^2$$

$$a^2 = 30^2 - 25^2$$

$$a^2 = 275$$

$$a = \sqrt{275}$$

$$a = 16.58 \text{ ft}$$

Oct 24-8:24 PM

Pythagorean Triple

- Special case Pythagorean triangle
- A triangle where all the sides are equal to natural numbers (not decimals) and it satisfies the Pythagorean Theorem. $9^2 + 12^2 = 15^2$?

Feb 13-4:41 PM

Cam is a surveyor working in Prince Edward Island. He needs to estimate the length of a small pond beside the Summerside Airport. He decides to use a right triangle, as shown in the diagram, as an indirect method of measurement.

1. Why might a surveyor use an indirect method of measurement in the example above?
2. What is the length of the pond?

Is this a pythagorean triple?

$$200^2 + 150^2 = 250^2$$

$$n = 250 \text{ m}$$

Oct 24-8:27 PM

Homework

Pg. 290 Q. 1 & 2

Pg. 292 Q, 3 - 5

Pg. 294 Q. 6 & 7

Nov 29-3:09 PM