Name _____ Class _____ Date _____

Reteaching 10-2

The Pythagorean Theorem

OBJECTIVE: Solve problems using the Pythagorean Theorem

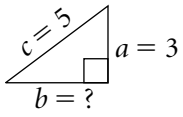
MATERIALS: None

As you solve problems using the Pythagorean Theorem, keep in mind these ideas.

- In the formula, a and b represent the *legs* of the right triangle.
- The *hypotenuse* is represented by c. This is the side *opposite* the right angle.
- Drawing a picture of the triangle each time is a good strategy for making sure you use the formula correctly.
- Writing a, b, and c on your picture with the values from your problem gives you a visual representation of your problem before you solve it.

Example

Find the length of the missing side: $a = 3, b = ■, c = 5$.



← **Draw a triangle and include the values from the problem for *a*, *b*, and *c*.**

$a^2 + b^2 = c^2$ ← **Use the Pythagorean Theorem.**

$3^2 + b^2 = 5^2$ ← **Substitute 3 for *a* and 5 for *c*.**

$9 + b^2 = 25$ ← **Simplify.**

$b^2 = 16$ ← **Subtract 9 from each side.**

$\sqrt{b^2} = \sqrt{16}$ ← **Take the square root of each side.**

$b = 4$ ← **Use a calculator if necessary.**

Exercises

Draw and label a triangle. Find the length of the missing side to the nearest tenth.

1. $a = 6, b = ■, c = 10$

2. $a = ■, b = 4, c = 10$

3. $a = 5, b = 12, c = ■$

Find the length of the missing side to the nearest tenth.

4. $a = ■, b = 5, c = 7$

5. $a = 4, b = ■, c = 9$

6. $a = 7.5, b = 4, c = ■$

7. $a = 5, b = ■, c = 12$

8. $a = 8, b = ■, c = 17$

9. $a = 6, b = 8, c = ■$

10. $a = ■, b = 24, c = 25$

11. $a = 4, b = 3, c = ■$

12. $a = 9, b = ■, c = 15$

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