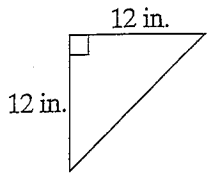
Name _____ Class _____ Date _____

Practice 3-2

The Pythagorean Theorem

Find the length of the hypotenuse of each triangle. If necessary, round to the nearest tenth.

1. 

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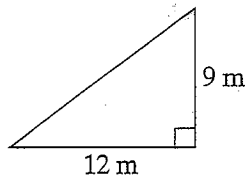
2. 

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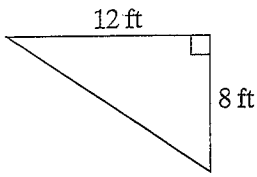
3. 

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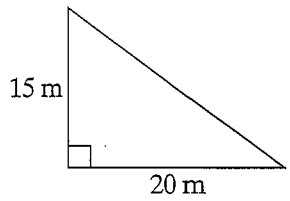
4. 

_____

Let a and b represent the lengths of the legs of a right triangle. Find the length of the hypotenuse. If necessary, round to the nearest tenth.

5. $a = 14, b = 18$

_____

6. $a = 7, b = 23$

_____

Solve.

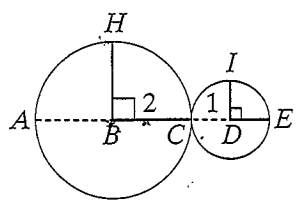
7. A circus performer walks on a tightrope 25 feet above the ground. The tightrope is supported by two beams and two support cables. If the distance between each beam and the base of its suppport cable is 15 feet, what is the length of the support cable? Round to the nearest foot.

_____

You are given three circles, as shown. Points *A, B, C, D,* and *E* lie on the same line. Find the length of each segment to the nearest tenth.

8. $\overline{HD}$ _____

9. $\overline{IE}$ _____



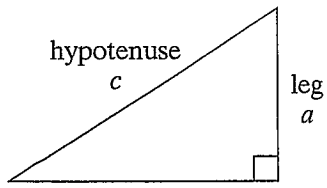
Name _____ Class _____ Date _____

Reteaching 3-2

The Pythagorean Theorem

The Pythagorean Theorem

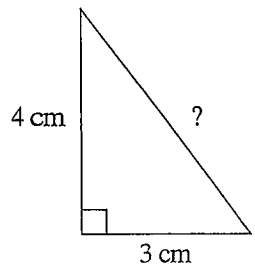
The sum of the squares of the lengths of the *legs* of a right triangle is equal to the square of the length of the *hypotenuse*.



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

Example 1: Find the length of the hypotenuse.

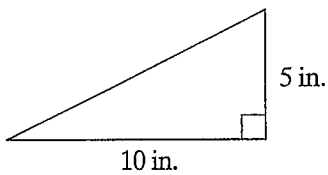
$$a^2 + b^2 = c^2$$
$$3^2 + 4^2 = c^2$$
$$9 + 16 = c^2$$
$$25 = c^2$$
$$\sqrt{25} = c^2$$
$$5 = c$$



The length c of the hypotenuse is 5 cm.

Find the length of the hypotenuse of each triangle. If necessary, round to the nearest tenth.

1.



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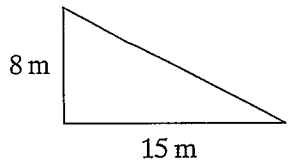
2.



_____

The lengths of the legs of a right triangle are given. Find the length of the hypotenuse.

3. legs: 6 ft and 8 ft
hypotenuse:

_____

4. legs: 12 cm and 5 cm
hypotenuse:

_____

5. legs: 24 mm and 7 mm
hypotenuse:

_____

6. legs: 15 yd and 20 yd
hypotenuse:

_____

7. legs: 0.024 m and 0.007 m
hypotenuse:

_____

8. legs: 3,000 mi and 4,000 mi
hypotenuse:

_____