Flash Cards: Pythagorean Theorem

Directions: Answer the following.

1. Name the legs and the hypotenuse of the following right triangle. The triangle has right angle B and acute angles A and C.

2. Is the following a Pythagorean Triple: 7, 19, 20?

3. Find the missing side length. The right triangle has legs with measures 18 and 23.

4. Find the missing side length. The right triangle has a leg with measure 101 and the hypotenuse with measure 121.

5. If your school is 6 miles east and 8 miles north of where you live, how far is your school if you could drive straight there.

6. A 10 ft ladder is leaning against the wall. The base of the ladder is 3.5 feet from the wall. How far up the wall is the top of the ladder?

7. Televisions are named by the length of their diagonals. In other words, a 42 in television measures 42 inches across the diagonal. If this 42 in television is 21 inches tall, how wide it is?

Answers:

1. Legs: segment AB and segment BC. Hypotenuse: segment AC.

2. $7^2 + 19^2 = 20^2$
$49 + 361 = 400$
$410 = 400$
This is NOT true, so they are not a Pythagorean Triple.

3. $18^2 + 23^2 = x^2$
$324 + 529 = x^2$
$853 = x^2$
$\sqrt{853} = x$
$29.21 \approx x$

4. $101^2 + x^2 = 121^2$
$10{,}201 + x^2 = 14{,}641$
$x^2 = 4440$
$x = \sqrt{4440}$
$x \approx 66.63$

5. $d^2 = 6^2 + 8^2$
$d^2 = 36 + 64$
$d^2 = 100$
$d = 10$

The school is 10 miles away.

6. $3.5^2 + x^2 = 10^2$
$12.25 + x^2 = 100$
$x^2 = 87.75$
$x = \sqrt{87.75} \approx 9.37$
The top of the ladder is approximately 9.37 feet up the wall.

7. $21^2 + w^2 = 42^2$
$441 + w^2 = 1764$
$w^2 = 1323$
$w = \sqrt{1323} \approx 36.37$
The television is approximately 36.37 inches wide.