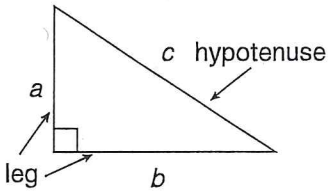
Name Key Date _____ Per. _____

LESSON 9-8

Reteach

The Pythagorean Theorem

A triangle containing a right angle is called a *right triangle.* The sides adjacent to the right angle are the **legs,** represented by *a* and *b.* The side opposite the right angle is the **hypotenuse,** represented by *c.*

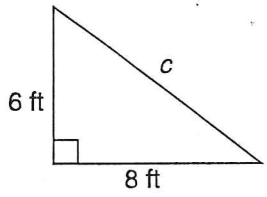


The **Pythagorean Theorem** states:

If *a* and *b* are the lengths of the legs of a right triangle and *c* is the length of the hypotenuse, then $a^2 + b^2 = c^2$.

Use the Pythagorean Theorem to find each missing length. Show ALL work!!

1.



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

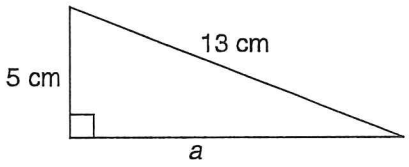
$6^2 + 8^2 = c^2$

$36 + 64 = c^2$

$\sqrt{100} = \sqrt{c^2}$

$10 = c$

2.



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

$a^2 + 5^2 = 13^2$

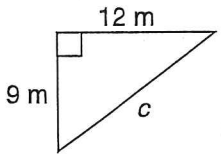
$a^2 + 25 = 169$

$-25 \quad -25$

$\sqrt{a^2} = \sqrt{144}$

$a = 12$

3.



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

$9^2+12^2=c^2$

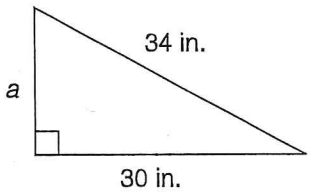
$81+144=c^2$

$\sqrt{225}=\sqrt{c^2}$

$15=c$

$c = 15$ m

4.



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

$a^2+30^2=34^2$

$a^2+900=1156$

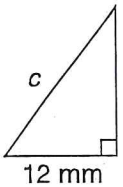
$-900 \quad -900$

$\sqrt{a^2}=\sqrt{256}$

$a=16$

$a = 16$ in.

5.



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

$12^2+16^2=c^2$

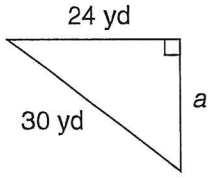
$144+256=c^2$

$\sqrt{400}=\sqrt{c^2}$

$20=c$

$c = 20$mm

6.



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

$a^2+24^2=30^2$

$a^2+576=900$

$-576 \quad -576$

$\sqrt{a^2}=\sqrt{324}$

$a=18$

$a = 18$ yd.