1.1 Blank Note

Monday, December 14, 2015 1:13 PM

Unit 1: Square Roots & The Pythagorean Theorem Math 8

1.1 Square Numbers and Area Models Name _____

A square is a quadrilateral that has four right angles and four equal sides.

We can use our knowledge of squares to help us determine if a number is a square number or a perfect square.

When a number is multiplied by itself, you square the number.
The product is a perfect square.

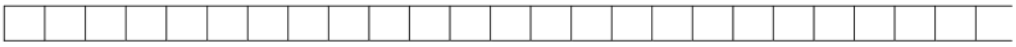
For example,

The square of 5 is $5 \times 5 = 25$
We write: $5^2 = 5 \times 5 = 25$
We say: Five squared is 25.

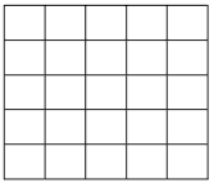
25 is a square **number**, or a perfect **square**.

Let's prove that 25 is a square number.

Using grid paper, draw rectangles with an area of 25 units to see if you can make a perfect square.



1 x 25



5 5 x 5

25 is a perfect square because one of the quadrilaterals is a square!

You should memorize the following perfect squares:

1= $1 \times 1 = 1^2$
4= $2 \times 2 = 2^2$
9= $3 \times 3 = 3^2$
16= $4 \times 4 = 4^2$
25= $5 \times 5 = 5^2$
36= $6 \times 6 = 6^2$
49= $7 \times 7 = 7^2$
64= $8 \times 8 = 8^2$
81= $9 \times 9 = 9^2$
100= $10 \times 10 = 10^2$
121= $11 \times 11 = 11^2$
144= $12 \times 12 = 12^2$
169= $13 \times 13 = 13^2$
196= $14 \times 14 = 14^2$
225= $15 \times 15 = 15^2$
256= $16 \times 16 = 16^2$
289= $17 \times 17 = 17^2$
324= $18 \times 18 = 18^2$
361= $19 \times 19 = 19^2$
400= $20 \times 20 = 20^2$

distance around a shape

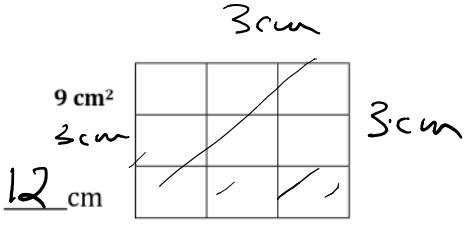
You can find the perimeter of a square if you are given the area of the square.

For example,
Find the perimeter of a square with the area 9 cm^2.

First, find the side length of the square.

Since $3 \times 3 =$ 9 , the side length is 3 cm.

So, the perimeter is 3 cm + 3 cm + 3 cm + 3 cm = 12 cm



hw p. 8 # 4, 5, 8, 9, 10bc, 11, 12, 14, 15, 16