Corner Brook Intermediate   Math 8

Unit 1: Square Roots and Pythagorean Theorem   Name: _____

Lesson 1.2: Squares and Square Roots

1. Find.
   a) 6^2 b) 11^2 c) 5^2 $= 5 \times 5$

   $= 6 \times 6$ $= 11 \times 11$ $= 25$

   $= 36$ $= 121$

2. Find a square root of each number.
   a) $\sqrt{49}$ b) $\sqrt{64}$ c) $\sqrt{196}$

   $= 7$ $= 8$ $= 14$

3. a) List the factors of each number in ascending order.
      Which numbers are squares? How do you know?
      i) 70   ii) 144   iii) 180

   $1 \times 70 = 70$ NO, even $1 \times 144 = 144$ $9 \times 16 = 144$

   $2 \times 35 = 70$ # of $2 \times 72 = 144$ $12 \times 12 = 144$

   $5 \times 14 = 70$ factors $3 \times 48 = 144$

   $7 \times 10 = 70$ $4 \times 36 = 144$ yes, odd #

                                   $6 \times 24 = 144$ of factors

                                   $8 \times 18 = 144$

   b) Find a square root of each square number in part a.

4. The factors of each number are listed in ascending order.

   Which numbers are square numbers?

   Find a square root of each square number.

   a) 216: 1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 27, 36, 54, 72, 108, 216   No, b/c there is an even

   b) 196: 1, 2, 4, 7, 14, 28, 49, 98, 196   yes, because   # of factors.

   c) 441: 1, 3, 9, 21, 49, 147, 441   odd # of factors

   yes b/c odd # of factors.

5. Find a number whose square root is 24.

working backwards - do inverse operation

$$\sqrt{?} = 24 \qquad (24)^2 = 24 \times 24 = \boxed{576}$$

6. Find the square root of each number.

a) $\sqrt{12^2}$ b) $\sqrt{15^2}$ c) $\sqrt{37^2}$

a) $= \sqrt{12 \times 12}$
$= \sqrt{144}$
$= 12$

b) $= 15$

c) $= 37$

7. Find the square of each number.

a) $\sqrt{9}^2$ b) $\sqrt{121}^2$ c) $\sqrt{841}^2$

a) $= 9$

b) $= 121$

c) $= 841$