Date: _____ Squares & Square Roots

A. DEFINITIONS:

1. square root - a number that, when multiplied by _____, equals another number

eg. the square root of 64 is ____ and ____ since $8 \times 8 = 64$ and $(-8) \times (-8) = 64$

the square root of 8.41 is _____ and _____ since 2.9 x 2.9 = 8.41 and (-2.9) x (-2.9) = 8.41

2. principal square root - it is the ______ square root

- we use this symbol $\sqrt{}$

eg. the principal square root of 64 is 8 since $8 \times 8 =$ _____

the principal square root of 8.41 is 2.9 since 2.9 x 2.9 = _____

3. perfect square - a number that has a ______ number as its principal square root - natural numbers are the ______ numbers (1, 2, 3, 4, 5, ...)

eg. 49 is a perfect square because its principal square root is _, a natural number

12.25 is _____ a perfect square because its principal square root is _____, and this is not a natural number

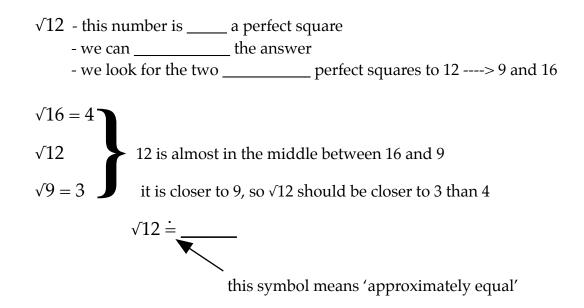
I. Find the following square roots. (You must memorize these perfect squares!)

a. √4 =	b. √9 =	c. √16 =	d. √25 =
e. √36 =	f. √49 =	g. √64 =	h. √81 =
i. √100 =	j. √121 =	k. √144 =	

II. Find the following square roots.

a. $\sqrt{0.04} =$ ____b. $\sqrt{0.16} =$ ____c. $\sqrt{1.21} =$ ____d. $\sqrt{1.44} =$ ____e. $\sqrt{225} =$ ____f. $\sqrt{196} =$ ____

B. ESTIMATING SQUARE ROOTS OF NUMBERS THAT ARE NOT PERFECT SQUARES



I. Estimate the square roots of these numbers. Use your calculator to check afterwards.

a.√15	b. √37	c. √50	d. √93
	21.01		

II. Find a number that has a square root between each of the following numbers. The first one is done for you.

a. 6 and 7	b. 5 and 6	c. 10 and 11
6 is the square root of 36 7 is the square root of 49		
So, a square root that is between 6 and 7 must be of numbers between 36 and 49. I can choose any number between those two numbers - I choose 39.		
Remember √39 will fall between 6 and 7.		