Module 4b: Simplifying Radicals

Math Practice(s):

-Look for & express regularity in repeated reasoning.

Learning Target(s):

-Simplify & perform operations on radicals.

Homework:

HW#1: 4b #1-9

Warm-up

1. Complete the table by squaring each number.

	2
n	n ²
1	
2	4
3	9
4	16
5	25
6	36
7	49
8	64
9	81
10	100
11	121
12	144
13	169
14	196
15	225
20	400
25	625
30	900
40	1600
50	2500

- 2. In the table to the left, each number in the $oldsymbol{n}^2$ column is called a **PERFECT SOUARE** (#VOC): a product that results from multiplying an integer by itself (i.e., the result when you "sauare" an integer).
- 144 is a perfect square because it is a product of 12 and itself
- 16 is a perfect square because it is a product of 4 and itself

Fill in the blanks:

- a. 81 is a perfect square because it is a product of
- b. 900 is a perfect square because it is a product of 30 itself.
- c. In general, n² is a perfect square because it is a product of and itself.

Reflection:

d. Considering the statements above, explain why the number 54 is not a perfect square.

There is no number, multiplied by itself, that equals 54. 54 isn't a product of a number and itself

e. State 3 other numbers that are not perfect squares.

19,42,94,37,20

- 3. Each of the following numbers has a factor that is a perfect square. Fill in the blanks to show that the given number has a *perfect square* factor.
 - Example: 20 is not a perfect square. However, one of its factors is a perfect square: 4. Therefore, $20 = 4 \cdot 5$

c.
$$75 = 25.3$$

a.
$$90 = 9 \cdot 10$$
 c. $75 = 25 \cdot 3$
b. $200 = 100 \cdot 2$ d. $12 = 4 \cdot 3$

4. Re-write the following square roots as equivalent whole numbers.

a.
$$\sqrt{49} = 7$$

c.
$$\sqrt{25} = 5$$

c.
$$\sqrt{25} = 5$$
 e. $\sqrt{144} = \sqrt{2}$

b.
$$\sqrt{81} = 0$$

d.
$$\sqrt{169} = 13$$
 f. $\sqrt{100} = 10$

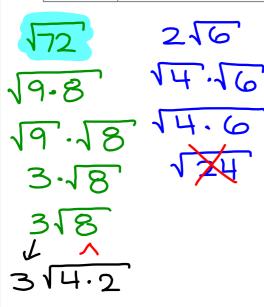
f.
$$\sqrt{100} = 10$$

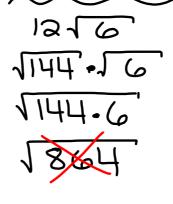
5. Which of the following expressions are equivalent to $\sqrt{72}$

?	4 •	18
	9.	8
	36	.2

Expression	Equivalent to $\sqrt{72}$? (Yes or No)
4 √18	No
2 √6	No
6 √2	simplest radical
3 √8	yes
12 √6	No

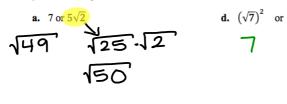
1a.p = 1a	J.1P
V72	4/18
136.2	4.118
V36.12	116.118
6.12	116-18
612	1288
^^	





Oct 19-7:18 AM

For each pair of numbers, indicate which one has a larger value. Do NOT use a calculator. Show your reasoning.



12

f.
$$\sqrt{17}$$
 or $(\sqrt{5})^2$

Solve each equation. Express your answer as a radical with no perfect square factors AND as a decimal (rounded to the thousandths place).

