Let's do some quick review:

Radicals?   *Square Roots?*

Simplifying Square Roots:

$$\sqrt{} \qquad\qquad \sqrt{} \qquad\qquad \sqrt{}$$

Product Property of Radicals: $\sqrt{ab} = \sqrt{a} \cdot \sqrt{b}$

To simplify, we will use the _____ with our trusty Perfect-Squares number line:

$\sqrt{0}$ $\sqrt{1}$ $\sqrt{4}$ $\sqrt{9}$ $\sqrt{16}$ $\sqrt{25}$ $\sqrt{36}$ $\sqrt{49}$ $\sqrt{64}$ $\sqrt{81}$ $\sqrt{100}$ $\sqrt{121}$ $\sqrt{144}$ $\sqrt{169}$ $\sqrt{196}$ $\sqrt{225}$

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Step 1: _____

Step 2: Start at the number given in the problem. _____ each perfect square on the top of the number line until you find a _____ of the given number. Write that number first under a radical.

Step 3: Write _____ second under a radical.

Step 4: Simplify _____ written. (Because it is a perfect sqaure… it will **ALWAYS** simplify to a whole number!)

Examples Simplify the following radical expressions:

I. $\sqrt{12}$ 2. $\sqrt{98}$ 3. $\sqrt{200}$

4. $-4\sqrt{300}$

5. $2\sqrt{18}$

6. $10\sqrt{108}$

7. $\sqrt{33}$

8. $-\sqrt{1000}$

9. $-\sqrt{26}$

Now, summarize your notes here!

Quick Review: Solve the quadratic equations using the given method.

1. Solve by factoring:	2. Solve by double factoring:	3. Solve by double factoring::
$x^2 - 3x = -2$	$4x^2 - 4 = 0$	$2x^2 - 18x + 40 = 0$

Algebra 1

Practice 11.1

Name_____

Simplify.

1) $-6\sqrt{100}$

2) $6\sqrt{32}$

3) $-5\sqrt{125}$

4) $-2\sqrt{150}$

5) $-4\sqrt{36}$

6) $5\sqrt{54}$

7) $-2\sqrt{20}$

8) $4\sqrt{32}$

9) $-\sqrt{216}$

10) $-\sqrt{30}$

11) $6\sqrt{125}$

12) $-5\sqrt{144}$

13) $2\sqrt{180}$

14) $4\sqrt{18}$

15) $3\sqrt{8}$

16) $5\sqrt{64}$

17) $5\sqrt{32}$

18) $-2\sqrt{12}$

19) $-4\sqrt{216}$

20) $-6\sqrt{30}$

Application and Extension

Simplify the following radicals: 1. $\sqrt{48}$ 2. $8\sqrt{72}$

3. The perimeter of a square is given by the function $P = 4\sqrt{a}$. Find the perimeter of a square that has an area that measures 225 m².

4. The time, t, in seconds it takes an object to free-fall a distance, d, is given by the function $t = \frac{1}{4}\sqrt{d}$. (This assumes no air resistance, of course!) Find the amount of time it would take a 25lb bowling ball to fall a distance of 16.

5. Let's do some awesome graphing!
   Let $f(x) = \sqrt{x}$.

   Fill in the table of values and graph the points

X	$\sqrt{x}$
0	
4	
9	
16	
25	
49	
64	
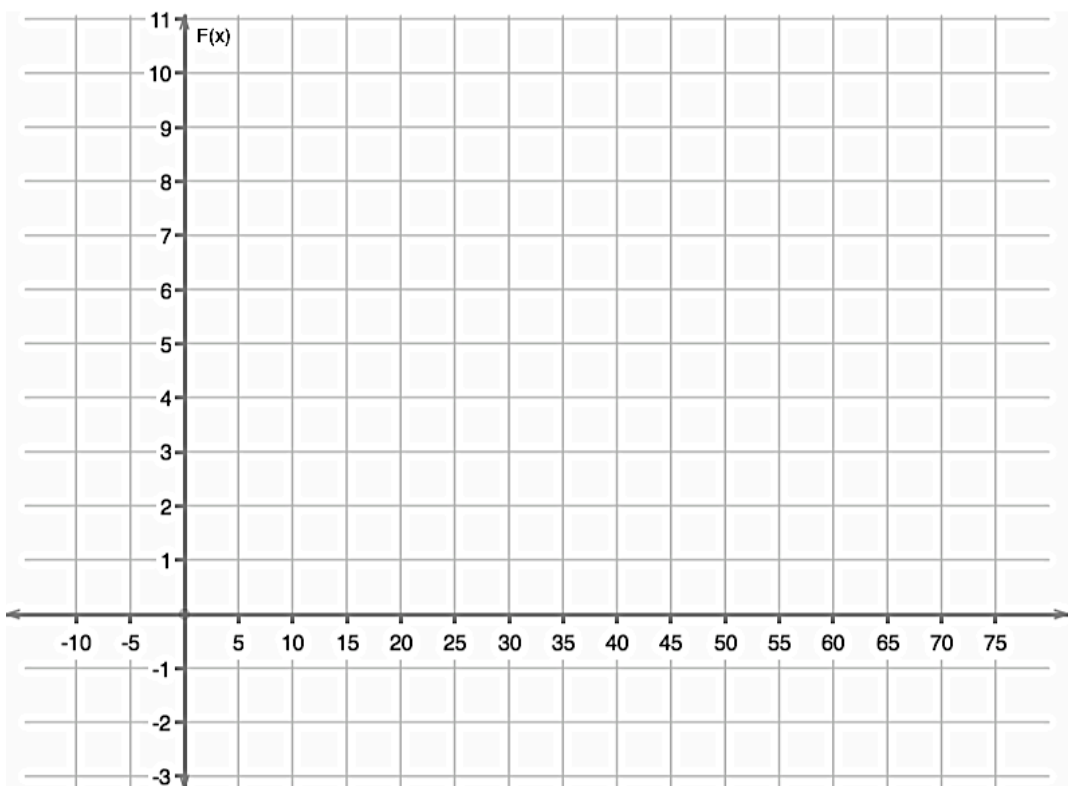
What is the domain (x-values) of this graph?   What is the range (y-values)?