

Let's do some quick review:

Radicals? *Square Roots?*



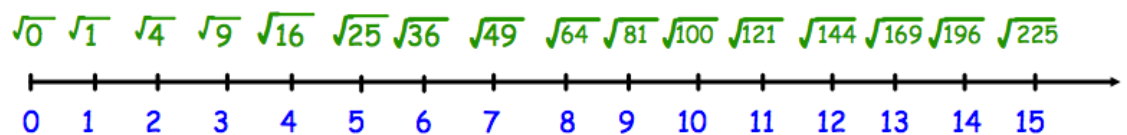
Simplifying Square Roots:



Product Property of Radicals:

$$\sqrt{ab} = \sqrt{a} \cdot \sqrt{b}$$

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



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
square... it will **ALWAYS** simplify to a whole number!)

Examples Simplify the following radical expressions:

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

Write your questions here!

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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.

3. Solve by factoring:

$$x^2 - 3x = -2$$

2. Solve using Square Roots:

$$4x^2 - 1 = 11$$

3. Solve using the Quadratic Formula:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$2x^2 - 18x + 40 = 0$$

Practice 12.1

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. $\sqrt{48}$

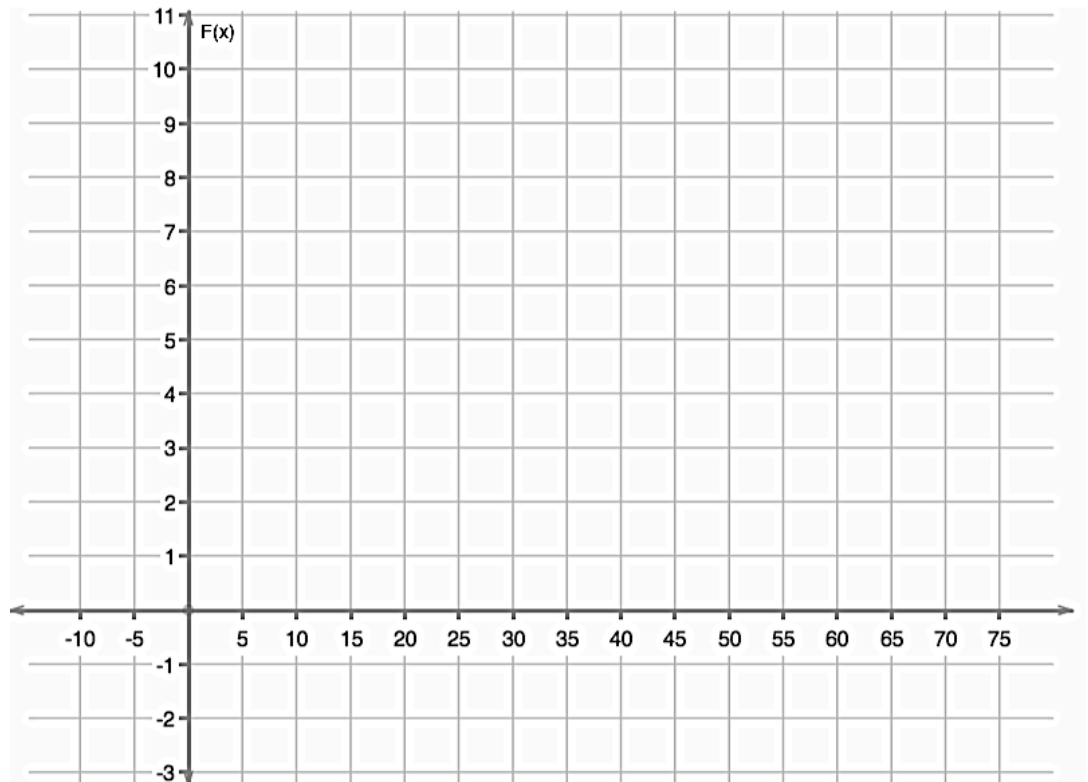
2. $8\sqrt{72}$

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 m^2 .
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 of this graph?

What is the range?