

Simplifying Radicals:

p.65

A radical is an expression enclosed by a square root symbol.

Example: $\sqrt{28}$

Steps for simplifying the radical:

1.) When solving the radical, find the largest perfect square that is less than the number given.

Example: 300: the largest perfect square that is less than 300 would be 289 (17 squared)

2.) If the largest perfect square less than the number given does not work you keep going down the list until you find the perfect square that does. (Always start from the biggest perfect square and go down the list of perfect squares.)

Example: 300: the largest perfect square less than 300 is 289 but does not work (has a decimal). Then try 256 (does not work has a decimal), then 225 (does not work has a decimal), then try 196 (does not work has a decimal), then try 169 (does not work has a decimal), then try 144 (does not work has a decimal), then try 121 (does not work has a decimal), then try 100.

300 divided by a perfect square of 100 gives you 3 which is a whole number.

3.) Now write out the radical of the given number into the square root of a number times the square root of a number.

Example: $\sqrt{300} = \sqrt{100} \cdot \sqrt{3}$; the square root of a 100 is 10 and the square root of 3 cannot be simplified.

4.) Answer: Write out your simplified radical.

Example: $\sqrt{300} = 10\sqrt{3}$