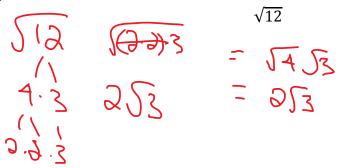
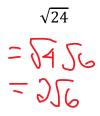
We looked at two methods for reducing radicals in Math 1201. The prime factorization method will be reviewed in Chapter 5 so we will review the **biggest perfect square** method. It is much quicker, so the one we want to use when simplifying the quadratic formula.

To reduce a radical, where the radicand is not a perfect square, we must find the biggest perfect square that divides evenly into the radicand.

Example 1:

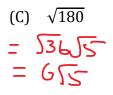


Example 2:



Example 3:





(E)  $\sqrt{432}$  = 5194 - 53= 1253

(C) √<u>196</u> ⊂ \ **4**--

(E) √1176 = JI9656 = 1456

## **Complex Numbers**

While you need to be aware that there are no real solutions to the square root of a negative number, here we will introduce to complex numbers. While there are many aspects to the complex number system, here we are only concerned with *i*. The following is true of *i*:

$$i = \sqrt{-1}$$
$$i^2 = -1$$

The imaginary unit is define by the square root of a negative number. For example:

## Example 4:

Write in simplest form:

(A) 
$$\sqrt{-16}$$
 (B)  $\sqrt{-32}$  (C)  $\sqrt{-248}$   
 $= \sqrt{16} \int_{-1}^{-16} = \sqrt{16} \int_{-1}^{-17} \int_{-16}^{-17} \int$