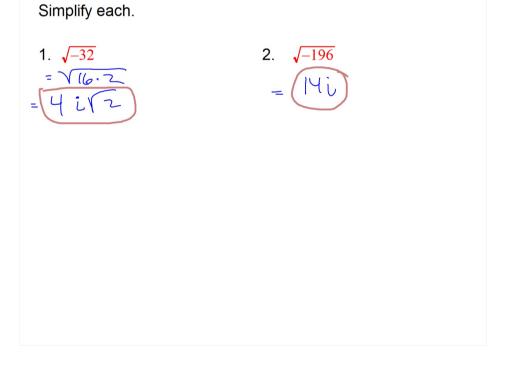


Imaginary Numbers: 
$$\sqrt{-1} = i$$
  $i$  is called the imaginary unit.



3. 
$$\sqrt{-17}$$



5. 
$$\sqrt{-36} + \sqrt{-81}$$

6. 
$$2\sqrt{-12} + 5\sqrt{-27}$$

$$2\sqrt{3}\sqrt{4} + 5\sqrt{9}\sqrt{3}$$
  
 $4\sqrt{3} + 15\sqrt{3}$ 

## Complex Numbers:

any number that can be written in the form: a + bi (a and b can be any real #) of a Complex

Standard Form Number

**Imaginary** Real Part Part

Real Number: when b=0

Imaginary Number: when b≠0 (a may or may not be zero)

10-7i or 13i Examples of Imaginary #'s:

The terms Complex Number and Imaginary Number are quite often used interchangeably.

## Write each as a Complex Number in Standard Form

1. 
$$2 + \sqrt{-9}$$

2. 
$$\sqrt{\frac{-12}{4\cdot 3}} - 5$$

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

$$i^2 = -1$$

## Simplify each:

1. 
$$4i(3+6i)$$
 2.  $(2+3i)(1-5i)$   $2+3i$   $2 + 3i$   $2 + 3i$ 

## Simplify each expression:

1. 
$$(6 - \sqrt{-64}) + (5 + \sqrt{-49})$$
  
 $(6 - 8i) + (5 + 7i)$ 

2. 
$$(-11 + \sqrt{-9}) - (6 - \sqrt{144})$$

$$(-11 + 3i) - (6 - 12i)$$

$$(-17 + 15i)$$