

**Precalculus Unit 2: 2.4 Homework**  
**Complex Numbers**

Simplify each and write the answer in standard complex form.

1.  $i^{17}$

2.  $i^3$

3.  $\sqrt{-48}$

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

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

6.  $-5i(2 - 3i)^2$

Write the conjugate of each number and then multiply the given number by its conjugate.

7.  $3 - 4i$

8.  $-3i + 2$

9.  $a + bi$

Find the quotient of the following complex numbers. Write in standard form.

11.  $\frac{8}{i}$

12.  $\frac{4i^2}{1-i}$

13.  $\frac{3+2i}{2+i}$

14.  $\frac{5+i}{8-3i}$

Solve:

15.  $3x^2 - 6x + 8 = 0$