

## General Algebra II Worksheet #6 Unit 7 Selected Solutions

Graph each of the following numbers on the complex number plane. Label your graphs properly.

1.  $8 + 5i$

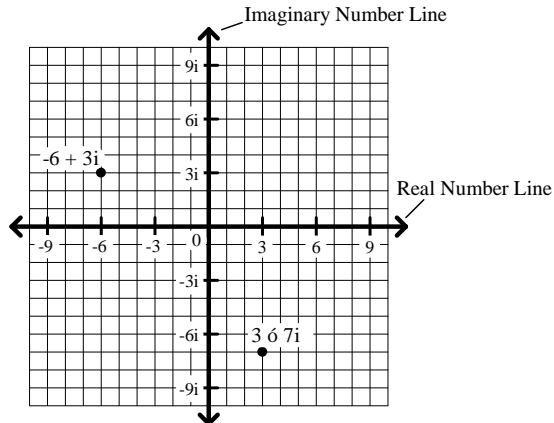
2.  $-6 + 3i$

3.  $-8 - 4i$

4.  $3 - 7i$

5.  $-8$

6.  $6i$



Find the indicated absolute values. Express your answers in simplest form.

$$8. \quad |-3 - 4i| = \sqrt{(-3)^2 + (-4)^2}$$

$$= \sqrt{9 + 16} = \sqrt{25} = \underline{5}$$

Perform the indicated operations. Express complex answers in  $a + bi$  form.

21.  $(4 - i) + (7 - 8i) = \underline{11 - 9i}$

24.  $(3 - 2i) - (-3 - 5i) =$   
 $(3 - 2i) + (3 + 5i) = \underline{6 + 3i}$

28.  $-2(-5 + 3i) = \underline{10 - 6i}$

30.  $3i(2 + i) = 6i + 3i^2 = \underline{-3 + 6i}$   
 (remember  $i^2 = -1$ )

33.  $(6 + i)(5 + 2i) = 30 + 12i + 5i + 2i^2$   
 $= \underline{28 + 17i}$

38.  $(4 + i)(3 - i) = 12 - 4i + 3i - i^2$   
 $= \underline{13 - i}$

39.  $(3 - 2i)^2 = 9 - 12i + 4i^2 = \underline{5 - 12i}$

43.  $(3 + 2i)^3 =$   
 $(3 + 2i)^2 = 9 + 12i + 4i^2 = 5 + 12i$   
 $(3 + 2i)^3 = (3 + 2i)(5 + 12i)$   
 $= 15 + 36i + 10i + 24i^2 = \underline{-9 + 46i}$