

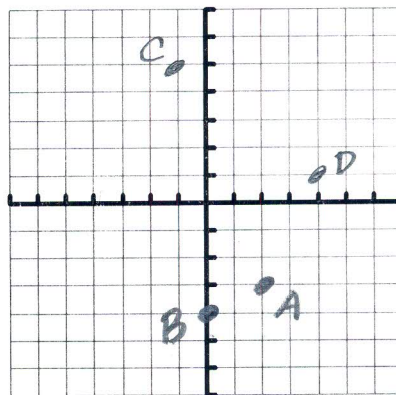
1. Plot and label each complex number on the complex plane.

A. $2 - 3i$

B. $-4i$

C. $-1 + 5i$

D. $4 + i$



2. Simplify, writing each answer as a complex number in standard form.

a. $\sqrt{-100}$

$10i$

b. $\sqrt{-24}$

$2i\sqrt{6}$

c. $\sqrt{-72} + \sqrt{81}$

$9 + 6i\sqrt{2}$

d. $\sqrt{\frac{9}{16}}$

$\frac{3}{4}i$

3. Add or subtract, writing each answer as a complex number in standard form.

a. $(2 - 3i) + (-1 - 5i)$

$1 - 8i$

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

$4 - i + 2 - 3i$
 $6 - 4i$

c. $-13 - (25 - 3i) + 25i$

$-13 - 25 + 3i + 25i$
 $-38 + 28i$

4. Multiply, writing each answer as a complex number in standard form.

a. $-3i(4 - 2i)$

$-12i + 6i^2$

$-6 - 12i$

b. $(5 - 2i)(1 + 3i)$

$5 + 15i - 2i - 6i^2$

$11 + 13i$

c. $(4 - i)(3 + 2i)(1 + i)$

$(4 - i)(1 + 5i)$

$4 + 19i - 5i^2$

5. Divide, writing each answer as a complex number in standard form.

a. $\frac{(4-3i) \cdot 2i}{-2i \cdot 2i} = \frac{8i - 6i^2}{-4i^2} = \frac{6 + 8i}{4} = \frac{3}{2} + 2i$

$9 + 19i$

b. $\frac{(2+5i) \cdot (3+i)}{(3-i) \cdot (3+i)} = \frac{6 + 17i + 5i^2}{9 - i^2} = \frac{1 + 17i}{10} = \frac{1}{10} + \frac{17}{10}i$

$\frac{1}{10} + \frac{17}{10}i$

6. Find real numbers x and y to make each equation true.

a. $2x - 4yi = 8 + 12i$

$2x = 8$
 $x = 4$

$-4yi = 12i$
 $y = -3$

b. $-4x - 4yi = 48i$

$-4x = 0$
 $x = 0$

$-4yi = 48i$
 $y = -12$

c. $4x - 7i = 22 - 2yi$

$4x = 22$
 $x = \frac{11}{2}$

$-7i = 2yi$
 $-\frac{7}{2} = y$