

## Multiplying Complex Numbers (ALG.CN.05)

Perform each operation and write the result in standard form.

1.  $2i \cdot -5i \cdot 3i$

2.  $7i^2 \cdot -i^5 \cdot -2i^4$

3.  $-3(1 - 2i)$

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

5.  $(-3 + 7i)(5 - 2i)$

6.  $(4 - 9i)(9 - 4i)$

7.  $(3 - i)(3 + i)(3 + i)$

8.  $2i(3 - 5i)(6 + i)$

9.  $(\sqrt{7} - \sqrt{10}i)(\sqrt{7} + \sqrt{10}i)$

10.  $(2\sqrt{5} + 3i\sqrt{6})(2\sqrt{5} - 3i\sqrt{6})$

11.  $(2 + 3i)^2$

12.  $(4 - 5i)^2$

13.  $(-6 + i)^3$

14.  $(3 - 2i)^3$

15.  $(5 - 2i)^2 - (-3 + i)^2$

16.  $(1 + 5i)^2 - (5 - 4i)^2$

Cube each complex number.

17. 2

18.  $-1 + \sqrt{3}i$

19.  $-1 - \sqrt{3}i$

20. -3

21.  $\frac{3}{2} + \frac{3\sqrt{3}}{2}i$

22.  $\frac{3}{2} - \frac{3\sqrt{3}}{2}i$

Raise each complex number to the power of four.

23. 5

24. -5

25.  $5i$

26.  $-5i$