

Write the complex number in standard form.

1.) $3 + \sqrt{-9}$

2.) $-3i^2 + i$

3.) $(\sqrt{-75})^2$

Perform the addition or subtraction and write the result in standard form.

4.) $(4 + i) + (7 - 2i)$

5.) $(11 - 2i) + (-3 + 6i)$

6.) $(7 + \sqrt{-18}) - (3 + 3i\sqrt{2})$

7.) $13i - (14 - 7i)$

8.) $22 + (-5 + 8i) + 10i$

9.) $-\left(\frac{3}{4} + \frac{7}{5}i\right) - \left(\frac{5}{6} - \frac{1}{6}i\right)$

Perform the multiplication and write the result in standard form.

10.) $\sqrt{-6} \cdot \sqrt{-2}$

11.) $(1 + i)(3 - 2i)$

12.) $(6 - 2i)(2 - 3i)$

13.) $(\sqrt{14} + i\sqrt{10})(\sqrt{14} - i\sqrt{10})$

Find the product of the number and its conjugate.

14.) $4 + 3i$

15.) $-3 + i\sqrt{2}$

Perform the division and write the result in standard form.

16.) $\frac{6}{i}$

17.) $\frac{4}{4 - 5i}$

18.) $\frac{8 - 7i}{1 - 2i}$

19.) $\frac{1}{(4 - 5i)^2}$

20.) $\frac{(2 - 3i)(5i)}{2 + 3i}$

21.) $\frac{2i}{2 + i} + \frac{5}{2 - i}$

Simplify the complex number and write it in standard form.

22.) $4i^2 - 2i^3$

23.) $-5i^5$

24.) $(\sqrt{-2})^6$