

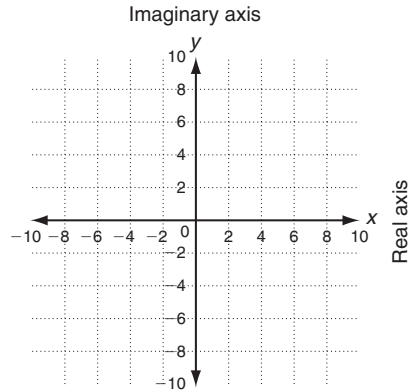


Practice B

Operations with Complex Numbers

Graph each complex number.

1. -6
2. $4i$
3. $6 + 7i$
4. $-8 - 5i$
5. $-3i$



Find each absolute value.

6. $|4 + 2i|$
7. $|5 - i|$
8. $|-3i|$

Add or subtract. Write the result in the form $a + bi$.

9. $(-1 + 2i) + (6 - 9i)$
10. $(3 - 3i) - (4 + 7i)$
11. $(-5 + 2i) + (-2 + 8i)$

Multiply. Write the result in the form $a + bi$.

12. $3i(2 - 3i)$
13. $(4 + 5i)(2 + i)$
14. $(-1 + 6i)(3 - 2i)$

Simplify.

15. $\frac{2 + 4i}{3i}$
16. $\frac{3 + 2i}{4 + i}$
17. $2i^{11}$

Solve.

18. In electronics, the total resistance to the flow of electricity in a circuit is called the impedance, Z . Impedance is represented by a complex number. The total impedance in a series circuit is the sum of individual impedances. The impedance in one part of a circuit is $Z_1 = 3 + 4i$. In another part of a circuit, the impedance is $Z_2 = 5 - 2i$. What is the total impedance of the circuit?

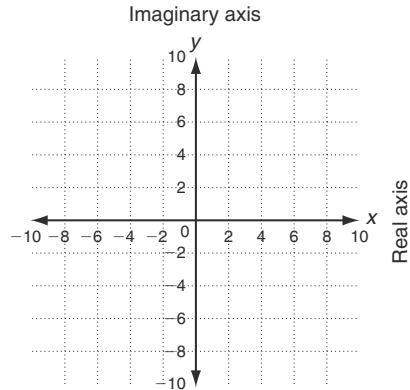


Practice B

Operations with Complex Numbers

Graph each complex number.

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Find each absolute value.

6. $|4 + 2i|$

7. $|5 - i|$

8. $|-3i|$

 $2\sqrt{5}$

 $\sqrt{26}$

 3

Add or subtract. Write the result in the form $a + bi$.

9. $(-1 + 2i) + (6 - 9i)$

10. $(3 - 3i) - (4 + 7i)$

11. $(-5 + 2i) + (-2 + 8i)$

 $5 - 7i$

 $-1 - 10i$

 $-7 + 10i$

Multiply. Write the result in the form $a + bi$.

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

13. $(4 + 5i)(2 + i)$

14. $(-1 + 6i)(3 - 2i)$

 $9 + 6i$

 $3 + 14i$

 $9 + 20i$

Simplify.

15. $\frac{2 + 4i}{3i}$

16. $\frac{3 + 2i}{4 + i}$

17. $2i^{11}$

 $\frac{4}{3} - \frac{2}{3}i$

 $\frac{14}{17} + \frac{5}{17}i$

 $-2i$

Solve.

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 $8 + 2i$