## 7.1 Practice Set

1. What is the meaning of the general term of a sequence?
2. How can a sequence be thought of as a function?

Find the first 6 terms for each sequence.

3. $a_n = 3n + 4$
4. $a_k = (-3)^k$
5. $a_n = n^2 + n$
6. $a_k = \frac{k!}{2k}$
7. $a_j = 7j - 10$

Find the pattern for each sequence and write the general term.

8. $\{3,6,9,12,15, \ldots\}$
9. $\{2,4,8,16,32, \ldots\}$
10. $\{4,9,14,19,24, \ldots\}$
11. $\{-1,1,-1,1,-1,1, \ldots\}$
12. $\{5,10,15,20,25, \ldots\}$

### Distributed Practice Problems

For each of the following pairs of functions, find the compositions $(\boldsymbol{f} \circ \boldsymbol{g})(\boldsymbol{x})$ **and** $(\boldsymbol{g} \circ \boldsymbol{f})(\boldsymbol{x})$ and give any restrictions on the domain of the resulting function.

13. $\begin{cases} f(x) = -5x + 8 \\ g(x) = 3x^2 - x \end{cases}$

14. $\begin{cases} f(x) = \sqrt{9x - 4} \\ g(x) = \frac{1}{x^2} \end{cases}$

Determine the type of graph for each of the following relations.

15. $y^2 = x$

16. $y = 2x + 3$

17. $(x + 2)^2 - y^2 = 12$

18. $x^2 + 2x + y^2 + 4y = 21$

Solve each equation for the indicated variable.

19. $7 - 2|2y - 5| = -13$

20. $\sqrt{7x - 26} + x = 2$