Get Ready

Substitute and Evaluate

1. Evaluate each expression when $x = 4$ and $y = -3$.
   a) $2x + 4y$
   b) $-3x - 2y$
   c) $-4x + 3y + 5$
   d) $\frac{1}{2}x - \frac{2}{3}y$

2. Evaluate each expression when $a = -1$ and $b = 2$.
   a) $a - b + 4$
   b) $-3a + 2b - 7$
   c) $a - \frac{3}{4}b$
   d) $\frac{2}{3}b - \frac{1}{3}a$

Simplify Expressions

3. Simplify.
   a) $3x + 2(x + y)$
   b) $4x - 3(x - y)$
   c) $3a - 4b + 6a - 2b$
   d) $-4a - 3b - (2a + 5b)$

4. Simplify.
   a) $a - 2(2a + 3b) - 4(4a - b)$
   b) $3(x + y) - 2(x - 3y) + 6(2x + y)$
   c) $4(3x - y) - 6(x + 2y) - 5(x - 6)$
   d) $3(a + b + c) - 2(3a + 2b - c)$

Graph Lines

5. Graph each line. Use a table of values or the slope and y-intercept method.
   a) $y = -3x + 2$
   b) $y = \frac{1}{3}x - 4$
   c) $y = \frac{1}{2}x + 3$
   d) $y = -\frac{2}{5}x - 2$

6. Graph each line by first rewriting the equation in the form $y = mx + b$.
   a) $x + y + 3 = 0$
   b) $3x - 2y + 6 = 0$
   c) $-2x + 3y - 18 = 0$
   d) $-\frac{1}{2}x + \frac{1}{3}y + 2 = 0$

7. Graph each line by finding the intercepts.
   a) $x - y = 4$
   b) $3x + 2y = 12$
   c) $-4x + 3y = 24$
   d) $7x - 2y = 14$

8. Graph each line. Choose a convenient method.
   a) $y = \frac{2}{3}x + 4$
   b) $2x - 5y = 10$
   c) $x + y = 3$
   d) $y = -5x + 4$

Use a Graphing Calculator to Graph a Line

9. Graph each line in question 5 using a graphing calculator.

10. Use your rewritten equations from question 6 to graph each line using a graphing calculator.

Percent

11. Calculate each amount.
   a) the amount of sugar in 200 g of a 14% sugar IV drip
   b) the amount of interest owed at the end of a month on an outstanding balance of $3500 on a credit card if the company charges 1.5% per month

12. Find the simple interest earned after 1 year on each investment.
   a) $3000 invested at 2% per year
   b) $15 000 invested at 6% per year
   c) $9200 invested at 4.2% per year
   d) $13 500 invested at 3.7% per year

Use a Computer Algebra System (CAS) to Evaluate Expressions

13. Evaluate.
   a) $4x + 2$ when $x = 0$
   b) $5y - 7$ when $y = 2$
   c) $-3z + 6$ when $z = -1$

14. Use a CAS to check your answers in question 1. Hint: First substitute $x = 4$, and then substitute $y = -3$ in the resulting expression.

Use a CAS to Rearrange Equations

15. Use a CAS to check your work in question 6.