Name: _____ Date: _____
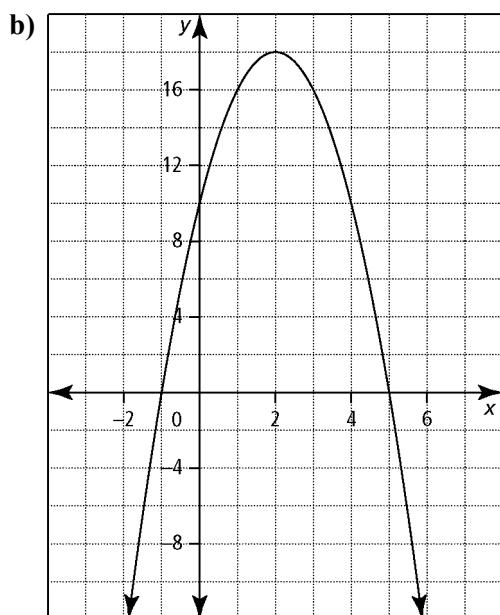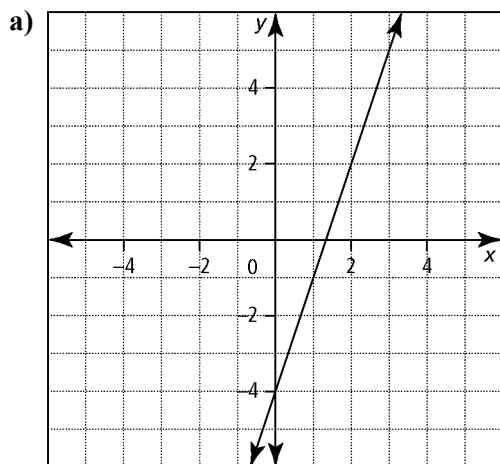
Chapter 9 Prerequisite Skills

1. What are the domain and range of each function shown? State your answers using set notation.

a)

b)

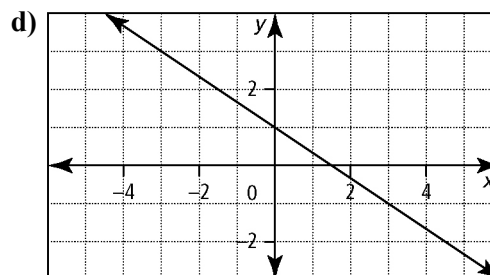**2.** What are the slope and *y*-intercept of each line?
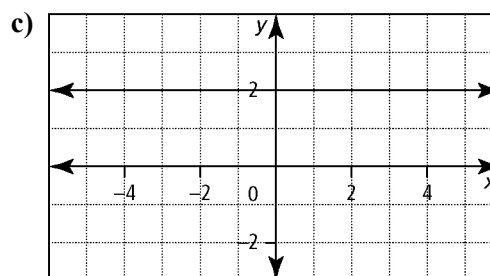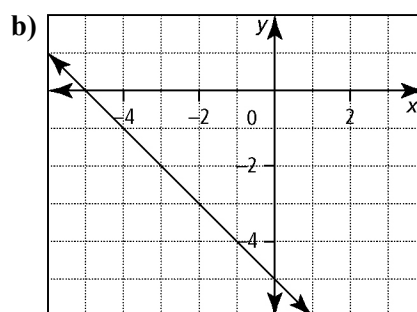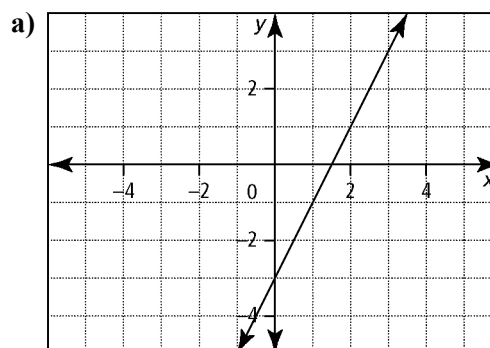
a) $y = -6x + 2$

b) $y = -\dfrac{1}{2}x - 3$

c) $y = 1.2 + 0.75x$

d) $5x = 3 - 2y$

3. Write the equation of each line in slope−intercept form.

a)

b)

c)

d)

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4. Write an equation for a line that passes through each pair of points.

  a) (5, 1) and (3, −7)

  b) (5, −8) and (1, 4)

  c) (3, 6) and (0, 0)

  d) (8, −3) and (−4, 6)

5. Sketch the graph of the function $f(x) = 2x^2 - 7x + 3$. Identify the following characteristics.

  a) vertex

  b) axis of symmetry

  c) direction of opening

  d) maximum or minimum value

  e) domain and range

  f) x-intercepts

  g) y-intercept

6. Factor each quadratic expression.

  a) $4x^2 - 13x + 9$

  b) $\dfrac{1}{2}x^2 - \dfrac{3}{2}x - 2$

  c) $5p^2 + 13p - 6$

  d) $3(v + 1)^2 + 10(v + 1) + 7$

7. Determine the roots of each quadratic equation.

  a) $-3x^2 - 2x + 5 = 0$

  b) $3x^2 - 4x - 1 = 0$

  c) $25x^2 + 90x + 81 = 0$

  d) $2x^2 - 5x = 3$