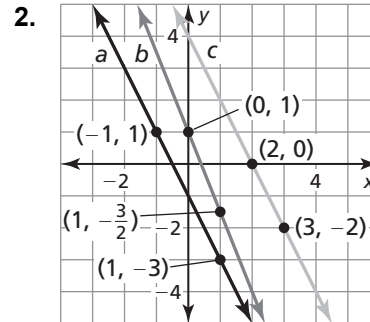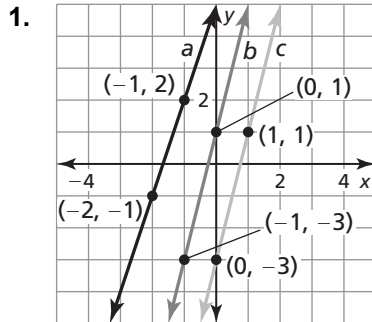**4.3** **Notetaking with Vocabulary** (continued)

## Extra Practice

**In Exercises 1–6, determine which of the lines, if any, are parallel. Explain.**

1.



2.



3. Line $a$ passes through $(-4, -1)$ and $(2, 2)$.

   Line $b$ passes through $(-5, -3)$ and $(5, 1)$.

   Line $c$ passes through $(-2, -3)$ and $(2, -1)$.

4. Line $a$ passes through $(-2, 5)$ and $(2, 1)$.

   Line $b$ passes through $(-4, 3)$ and $(3, 4)$.

   Line $c$ passes through $(-3, 4)$ and $(2, -6)$.

5. Line $a$: $4x = -3y + 9$

   Line $b$: $8y = -6x + 16$

   Line $c$: $4y = -3x + 9$

6. Line $a$: $5y - x = 4$

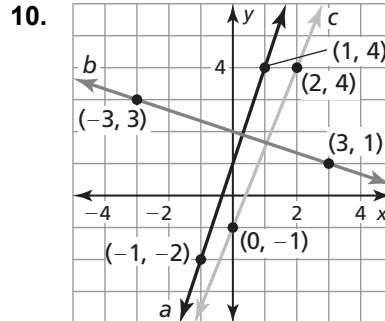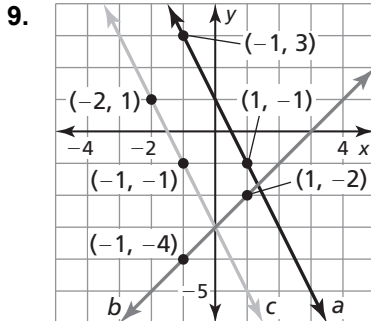   Line $b$: $5y = x + 7$

   Line $c$: $5y - 2x = 5$

**In Exercises 7 and 8, write an equation of the line that passes through the given point and is parallel to the given line.**

7. $(3, -1)$; $y = \frac{1}{3}x - 3$

8. $(1, -2)$; $y = -2x + 1$

**4.3** **Notetaking with Vocabulary** (continued)

**In Exercises 9–14, determine which of the lines, if any, are parallel or perpendicular. Explain.**

9.



10.



**11.** Line $a$ passes through $(-2, 4)$ and $(1, 1)$.

Line $b$ passes through $(2, 1)$ and $(4, 4)$.

Line $c$ passes through $(1, -2)$ and $(-1, 4)$.

**12.** Line $a$ passes through $(-2, -4)$ and $(-1, -1)$.

Line $b$ passes through $(-1, -4)$ and $(1, 2)$.

Line $c$ passes through $(2, 3)$ and $(4, 2)$.

**13.** Line $a$: $y = \frac{3}{4}x + 1$

Line $b$: $-3y = 4x - 3$

Line $c$: $4y = -3x + 9$

**14.** Line $a$: $5y - 2x = 1$

Line $b$: $y = \frac{5}{2}x - 1$

Line $c$: $y = \frac{2}{5}x + 3$

**In Exercises 15 and 16, write an equation of the line that passes through the given point and is perpendicular to the given line.**

**15.** $(-2, 2)$; $y = \frac{2}{3}x + 2$

**16.** $(3, 1)$; $2y = 4x - 3$