



5.5 EXERCISES

HOMEWORK KEY

-  = **WORKED-OUT SOLUTIONS**
on p. WS1 for Exs. 19 and 33
-  = **TAKS PRACTICE AND REASONING**
Exs. 16, 17, 28, 30, 34, 36, 38, and 39

SKILL PRACTICE

- VOCABULARY** Copy and complete: Two lines in a plane are ? if they intersect to form a right angle.
- WRITING** Explain how you can tell whether two lines are perpendicular, given the equations of the lines.

EXAMPLE 1

on p. 319
for Exs. 3–11

PARALLEL LINES Write an equation of the line that passes through the given point and is parallel to the given line.

- $(-1, 3)$, $y = 2x + 2$
- $(6, 8)$, $y = -\frac{5}{2}x + 10$
- $(5, -1)$, $y = -\frac{3}{5}x - 3$
- $(-1, 2)$, $y = 5x + 4$
- $(1, 7)$, $-6x + y = -1$
- $(18, 2)$, $3y = x - 12$
- $(-2, 5)$, $2y = 4x - 6$
- $(9, 4)$, $y - x = 3$
- $(-10, 0)$, $-y + 3x = 16$

EXAMPLE 2

on p. 320
for Exs. 12–16

PARALLEL OR PERPENDICULAR Determine which lines, if any, are parallel or perpendicular.

- Line a : $y = 4x - 2$, Line b : $y = -\frac{1}{4}x$, Line c : $y = -4x + 1$
- Line a : $y = \frac{3}{5}x + 1$, Line b : $5y = 3x - 2$, Line c : $10x - 6y = -4$
- Line a : $y = 3x + 6$, Line b : $3x + y = 6$, Line c : $3y = 2x + 18$
- Line a : $4x - 3y = 2$, Line b : $3x + 4y = -1$, Line c : $4y - 3x = 20$

-  **TAKS REASONING** Which statement is true of the given lines?

Line a : $-2x + y = 4$

Line b : $2x + 5y = 2$

Line c : $x + 2y = 4$

(A) Lines a and b are parallel.

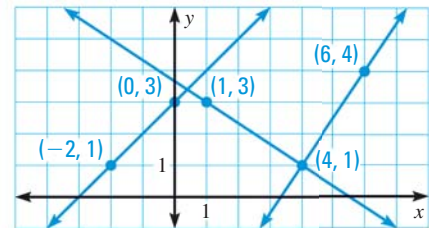
(B) Lines a and c are parallel.

(C) Lines a and b are perpendicular.

(D) Lines a and c are perpendicular.

-  **TAKS REASONING** Determine which of the lines shown, if any, are parallel or perpendicular. Justify your answer using slopes.

 at classzone.com



EXAMPLE 4

on p. 321
for Exs. 18–27

PERPENDICULAR LINES Write an equation of the line that passes through the given point and is perpendicular to the given line.

- $(3, -3)$, $y = x + 5$
- $(-9, 2)$, $y = 3x - 12$
- $(5, 1)$, $y = 5x - 2$
- $(7, 10)$, $y = 0.5x - 9$
- $(-2, -4)$, $y = -\frac{2}{7}x + 1$
- $(-4, -1)$, $y = \frac{4}{3}x + 6$
- $(3, 3)$, $2y = 3x - 6$
- $(-5, 2)$, $y + 3 = 2x$
- $(8, -1)$, $4y + 2x = 12$