Practice 9 ···
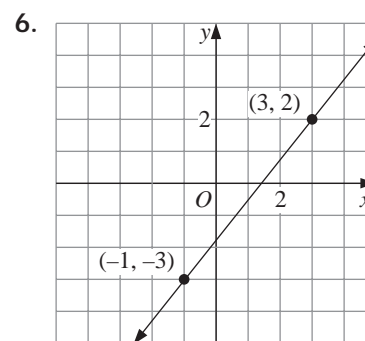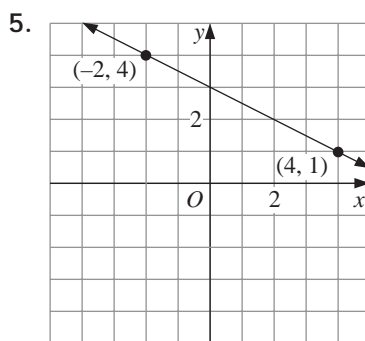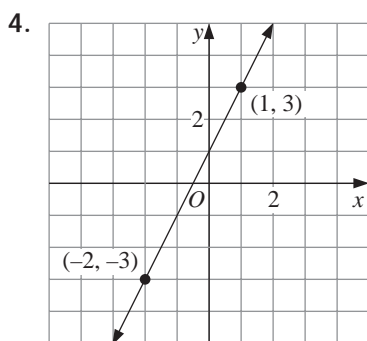
FOR USE WITH SECTION 2.3

For Exercises 1–3:

a. Write a point-slope equation of the line passing through the given points and having the given slope.

b. Graph the equation.

c. Write the equation in slope-intercept form.

1. $(-1, 3)$; slope $= 5$ **2.** $(2, -7)$; slope $= \dfrac{3}{4}$ **3.** $(-4, 0)$; slope $= -\dfrac{1}{4}$

Find a point-slope equation of each line.

4.

5.

6.

Find a point-slope equation of the line through each pair of points.

7. $(7, 5)$ and $(3, 9)$ **8.** $(-4, 1)$ and $(6, 5)$ **9.** $(9, -2)$ and $(3, 10)$

10. $(-2, 4)$ and $(11, 4)$ **11.** $(6, -5)$ and $(-2, -17)$ **12.** $(-1, 4)$ and $(2, -8)$

13. $(0, 12)$ and $(7, 5)$ **14.** $\left(1, \dfrac{1}{2}\right)$ and $\left(13, \dfrac{5}{2}\right)$ **15.** $\left(\dfrac{2}{3}, -6\right)$ and $\left(\dfrac{4}{3}, -5\right)$

Find the domain and range of each function.

16. $f(x) = 3x + 7$ for $x \geq -2$ **17.** $f(x) = -2x + 3$ for $x > 1$

18. $f(x) = \dfrac{1}{2}x - 5$ for $x < 4$ **19.** $f(x) = 3$ for $x \geq 7$

20. In a science experiment, a flask of water was left out to evaporate, in order to recover a dissolved salt. After 3 h, there were 150 cm^3 of water left in the flask, and after 5 h there were 40 cm^3 left.

a. Write a point-slope equation for y, the amount of water left in the flask after x hours.

b. How much water was in the flask when it was first put out?