

Lesson 4.3 • Lines in Motion

Name _____ Period _____ Date _____

1. Describe how each graph translates the graph of $y = f(x)$.

a. $y = f(x) + 5$

b. $y = f(x) - 3$

c. $y = f(x - 2)$

d. $y = f(x + 6)$

e. $y = f(x + 4) - 2$

f. $y = 5 + f(x - 7)$

2. Find each of the following.

a. $f(x + 1)$ if $f(x) = 3x$

b. $f(x - 2)$ if $f(x) = -4x$

c. $3 + f(x + 4)$ if $f(x) = 2x$

d. $-4 + f(x + 3)$ if $f(x) = -x$

e. $f(x - 5)$ if $f(x) = 2x + 1$

f. $3 + f(x + 6)$ if $f(x) = 8 - x$

3. Write an equation for each line.

a. The line $y = 2.5x$ translated up 4 units

b. The line $y = -1.2x$ translated right 3 units

c. The line $y = -x$ translated up 5 units and left 2 units

d. The line $y = \frac{1}{2}x$ translated down 1 unit and right 4 units

4. The graph of $y = f(x)$ is shown at right. Write an equation for each related graph showing how the function has been translated.

