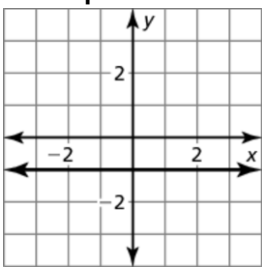
Name_____ Date _____

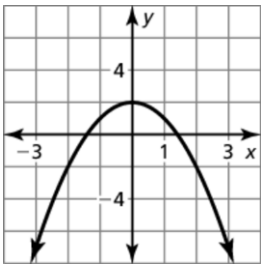
3.2 & 3.3 Practice B

In Exercises 1 and 2, determine whether the graph represents a *linear* or *nonlinear* function. Explain.

1.



2.



In Exercises 3 and 4, determine whether the table represents a *linear* or *nonlinear* function. Explain.

3.

x	0	2	4	6
y	3	9	27	81

4.

x	14	24	34	44
y	24	20	16	12

In Exercises 5–8, determine whether the equation represents a *linear* or *nonlinear* function. Explain.

5. $y - \frac{1}{3}x = 4x - 7$

6. $6 - \frac{2}{5}x = 3y + 8x$

7. $(y + 2)(y - 4) = 3x$

8. $4x - 5y + 2xy = 0$

In Exercises 9 and 10, determine whether the domain is *discrete* or *continuous*. Explain.

9.

Input Months, *x*	1	2	3
Output Height of basil plant (inches), *y*	3	7	11

10.

Input Tickets, *x*	10	20	30
Output Cost (dollars), *y*	60	120	180

In Exercises 11–13, evaluate the function when $x = -2$, 0, and 5.

11. $f(x) = 1.5x + 1$

12. $g(x) = 11 - 3x + 2$

13. $h(x) = -3 - x - 2$

14. Let $g(x)$ be the percent of your friends with a landline phone x years after 2000. Explain the meaning of each statement.

a. $g(0) = 100$

b. $g(5) = g(6)$

c. $g(10) = m$

d. $g(11) > g(12)$

In Exercises 15–18, find the value of *x* so that the function has the given value.

15. $f(x) = 8x - 7; f(x) = 17$

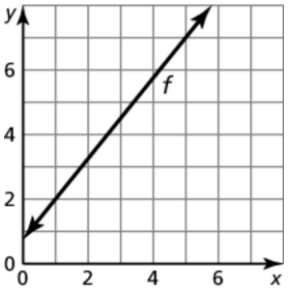
16. $g(x) = -4x + 7; g(x) = 27$

17. $f(x) = \frac{1}{3}x - 1; f(x) = 9$

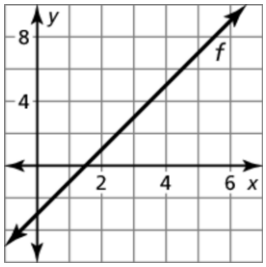
18. $h(x) = 6 - \frac{2}{3}x; h(x) = -2$

In Exercises 19 and 20, find the value of *x* so that $f(x) = 7$.

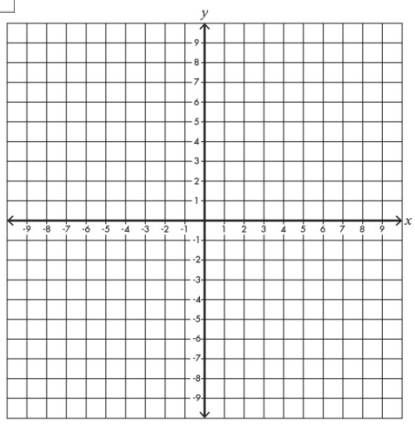
19.



20.



In Exercises 21–24, graph the linear functions on the graph provided. Label each function.



21. $h(x) = -\frac{3}{2}x + 4$

22. $p(x) = \frac{1}{4}x - 1$

23. $v(x) = -5 + 2x$

24. $k(x) = 4 - 3x$

25. The function $C(x) = 35x + 75$ represents the labor cost (in dollars) for Bob's Auto Repair to replace your alternator, where x is the number of hours. The table shows sample labor costs from its main competitor, Budget Auto Repair. The alternator is estimated to take 5 hours of labor. Which company would you hire? Explain.

Hours	1	2	3
Cost	\$90	\$130	\$170