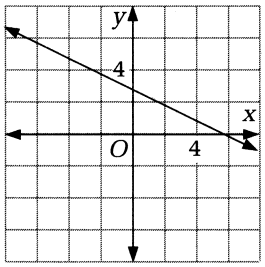
Name _____ Date _____

Practice 11

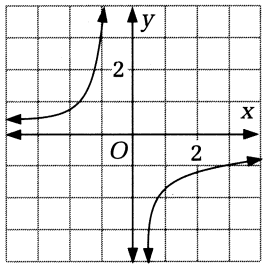
For use with Section 2-2

Tell whether each graph represents a linear function.

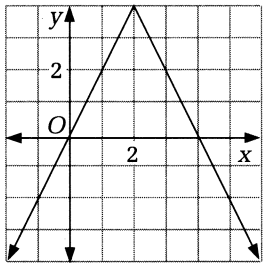
1.



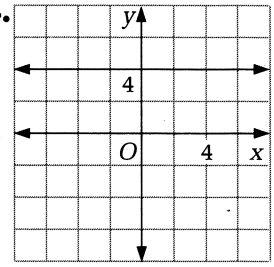
2.



3.



4.



Tell whether each function is linear. If it is, find $f(3)$, $f(-1)$, and $f(a + b)$.

5. $f(x) = -2x + 5$

6. $f(y) = \frac{1}{5y + 4}$

7. $f(x) = 1.8x$

8. $f(t) = \frac{t}{3} - 1$

9. $f(p) = p^2 - 10$

10. $f(x) = 6 - 3x$

11. $f(r) = (2r - 1)^2$

12. $f(z) = \frac{3}{z} + 1$

13. $f(x) = \frac{3x}{2} - 11$

Write an equation in the form $f(x) = mx + b$.

14. $f(3) = 1$; $f(7) = 13$

15. $f(-1) = 2$; $f(4) = -8$

16. $f(5) = -9$; $f(-3) = -5$

17. $f(-4) = -3$; $f(11) = 7$

18. $f(0) = 8$; $f(2) = 3$

19. $f(3) = 7$; $f(-3) = -2$

20. Rosa Quezada is reimbursed when she uses her own car in her work as a sales representative for Logos Publishing. She is repaid for all tolls, she gets $.40 per mile that she drives. On her next trip, the tolls will amount to $6.75. Write an equation for $R(d)$, the amount she will get, as a function of distance traveled.

21. Baldev Kumar needs to match a wooden molding for a remodeling job he is doing. A lumber mill has a $75 set-up charge for custom molding and charges $2.40 per foot of molding. The mill has a 50-foot minimum. Write an equation for $C(L)$, the cost of the molding as a function of its length. Find the domain and range of $C(L)$.

22. ***Open-ended*** Make up several linear functions. For each function $f(x)$, check whether it has the property that $f(a + b) = f(a) + f(b)$ for all real numbers a and b. If you find a function that has this property, find another and then make a conjecture about which linear functions have it and which do not.