1.4.D1

Exercises

DO:
10, 18, 19, 20, 24, 25, 29, 30–34

pe-

25.

Price per bottle, p ($)	0.50	0.75	1.00
Number of bottles sold, $q = f(p)$	1500	1000	500

output / input

Temperature, $y = f(x)$ (°C)	0	5	20
Temperature, x (°F)	32	41	68

output / input

Temperature, $y = f(x)$, (°R)	459.7	469.7	489.7
Temperature, x (°F)	0	10	30

Is each function in Exercises 10–15 linear? If so, rewrite it the form $y = b + mx$.

10. $g(w) = -\dfrac{1 - 12w}{3}$

11. $F(P) = 13 - \dfrac{2^{-1}}{4}P$

12. $j(s) = 3s^{-1} + 7$

13. $C(r) = 2\pi r$

14. $h(x) = 3^x + 12$

15. $f(x) = m^2x + n^2$

Find formulas for the linear functions in Exercises 16–23.

16. Slope -4 and x-intercept 7

17. Slope 3 and y-intercept 8

18. Passes through the points $(-1, 5)$ and $(2, -1)$

19. Slope $2/3$ and passes through the point $(5, 7)$

20. Has x-intercept 3 and y-intercept -5

21. Slope 0.1, passes through $(-0.1, 0.02)$

22. Function f has $f(0.3) = 0.8$ and $f(0.8) = -0.4$

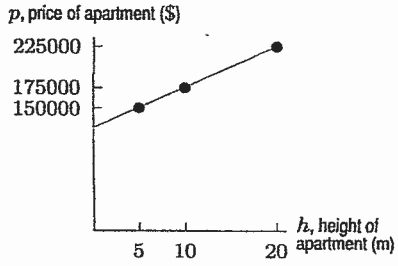
23. Function f has $f(-2) = 7$ and $f(3) = -3$

Exercises 24–30 give data from a linear function. Find a formula for the function.

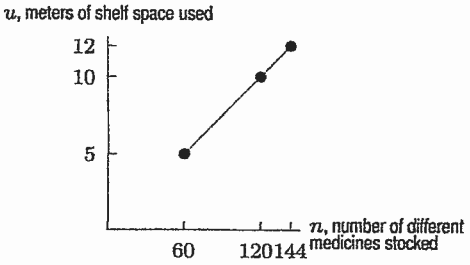
24.

Year, t	0	1	2
Value of computer, $V = f(t)$	2000	1500	1000

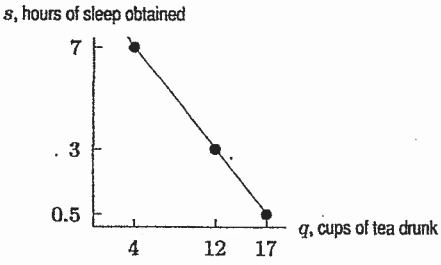
28.



29.



30.



Problems

Find formulas for the linear functions in Problems 31–34.

31. The graph of f contains $(-3, -8)$ and $(5, -20)$.

32. $g(100) = 2000$ and $g(400) = 3800$

33. $P = h(t)$ gives the size of a population that begins with 12,000 members and grows by 225 members each year.

34. The graph of h intersects the graph of $y = x^2$ at $x = -2$ and $x = 3$.