Applied Finite Mathematics, 3rd ed, 2016 Sekhon/Bloom

Chapter 1: Linear Models

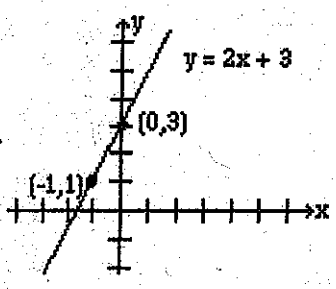
Answers to Odd Numbered Homework Problems and Answers to all Problems in the Chapter Review Section

1.1 Graphing a Linear Equation

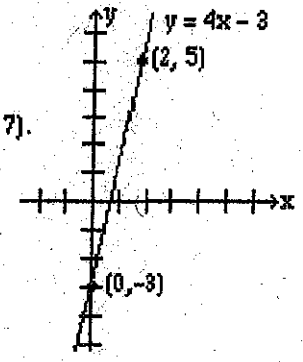
1). Yes

3). (2, –6), (6, 6), (0, –12), (4, 0)

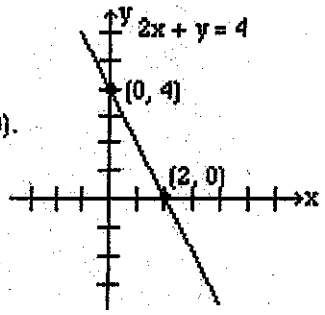
5).



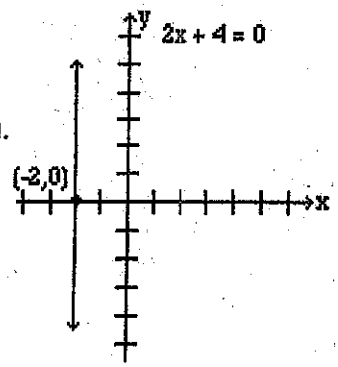
7).



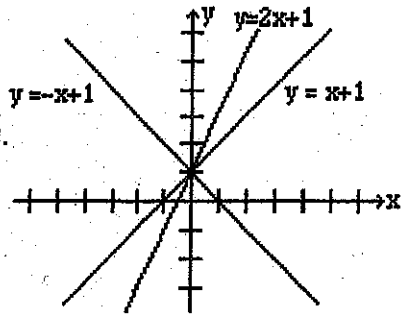
9).



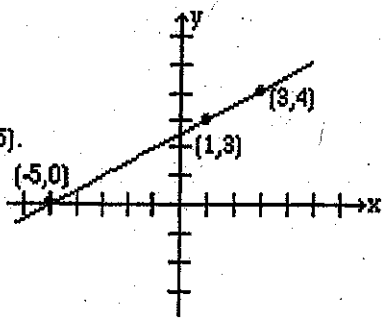
11).



13).



15).



1.2 Slope of a Line

1). m = 2

3). m = 1

5). m = –2

7). m = undefined

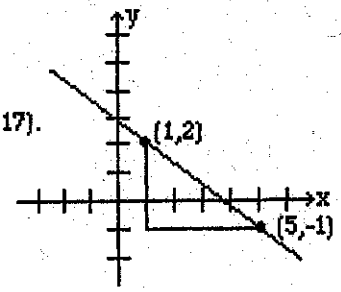
9). m = –1

11). m = –2

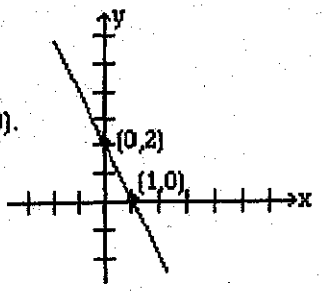
13). m = 2

15). m = 3/4

17).



19).



1.3 Determining the Equation of a Line

1). $y = 2x + 4$ 3). $y = 6x - 13$ 5). $y = 2/5\,x - 4$

7). $y = 7x - 32$ 9). $y = 5/2\,x - 10$ 11). $y = -4$

13). $x = 3$ 15). $2x - y = 7$ 17). $3x - 4y = -4$

19) $4x - 3y = 17$

21) $y + 3 = \frac{4}{3}(x - 2)$ OR $y - 1 = \frac{4}{3}(x - 5)$

23) $y + 2 = -\frac{2}{3}(x - 6)$ OR $y - 2 = -\frac{2}{3}(x - 0)$

25) $y - 7 = -\frac{1}{3}(x + 12)$

1.4 Applications

1). $y = 25x + 1200$ 3). $y = 20x + 350$ 5). $y = 80x + 24000$

7). $y = 2/5\,x$; 68 9). $y = 7x - 338$; 138 11). $F = 9/5\,C + 32$; 77°F

13) $y = .375x + 29.8$; 42.925 million people in 2025

15) $y = 120x + 13200$; 14400 students in 2010

17) $y = .18x + 10$; The cost is \$82 for a home using 400 kwh of electricity per month

19) a) $y = 12x + 110{,}000$ b) $y = \$230{,}000$ c) $x = \$7500$

21) a) $y = 3x + 1000$ b) When \$100 is spent on advertising, 1300 cups of coffee are sold.

1.5 More Applications

1). $x = 3, y = 13$

3) $x = \$11.50$ $y = 16500$ items

5) a) Plan I costs \$87; Plan II costs \$99; Plan I is better

b) $x = 150$ miles; both plans cost \$61.50

7) Supply Curve: $y = 400x - 1200$

9) $x = 4000$ cookies; cost = revenue = \$3200

11) $x = 8000$ pairs of socks; cost = revenue = \$36000

13) a) cost function $y = 10x + 700$

b) fixed cost = \$700

c) $x = 140$ pounds d) revenue = cost = \$2100

1.6 Chapter Review

1). $y = 0$	2). $-2/3$	3). -3
4). $4, -6$	5). $y = 3x + 5$	6). $3x + 2y = 6$
7). $y = 3x + 9$	8). $3x + 2y = 18$	9). $y = 9/5\,x + 32$
10). $y = 3x - 1$	11). $(3, -1)$	12). No
13). (2,1), (5,–1); Answers will vary		14). (3,0), (3, 1); Answers will vary
15). The line through (–3,0)& (0,2)		16). The line through (0,3)& (1,1)
17). $y = 4x - 140$; 140		18). $y = 1.35x + 15.2$; 142.5
19). $y = 30x + 2750$		20). $y = 10x + 1500$; 4500
21). $y = 15x + 1200$; 16200		22). $y = 10000x + 280000$; 580000

23) $y = 1.5x + 95.4$ if using $x =$ # of years after 1995

$y = 1.5x - 2897.1$ if using $x =$ calendar year

24) a) $y = -2x + 230$ b) 80 bowls of soup c) 65°F

25) $y = -50x + 450$ 26) $y = 80x - 400$

27) Price = \$6; number of mugs = 1300

28) Plan I: $y = 16 + .25x$ Plan II $y = 45$

At $x = 200$ miles Plan I costs \$66; Plan II costs \$45

Both cost the same at $x = 116$ miles

29) a) 4500 b) \$20 c) \$15 d) 2750 items

30) \$12; 6900 items 31) \$1700 sales

32) 600 items; revenue = cost = \$15000

33) 4000 CFL bulbs 34) 2500 items 35) 12500 shavers