

Applied Finite Mathematics, 3rd edition, 2016

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Updated by Roberta Bloom 2016

Chapter 1 Linear Models

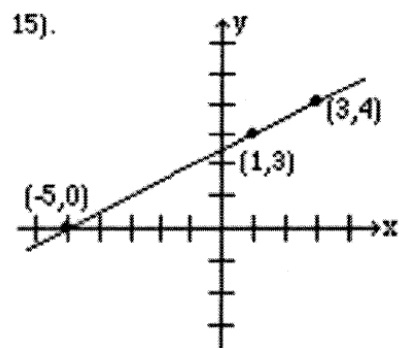
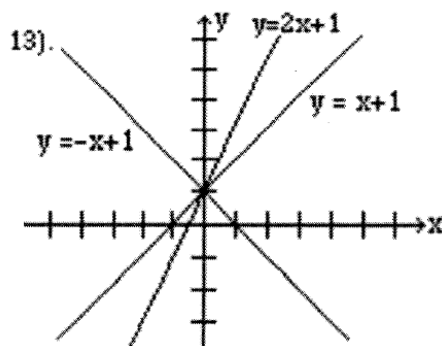
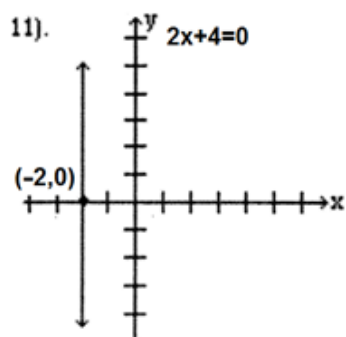
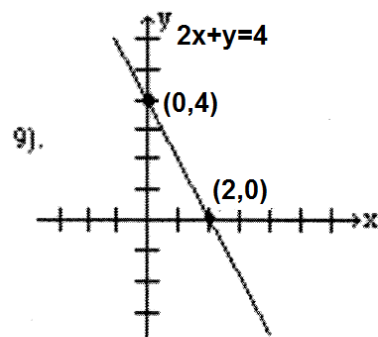
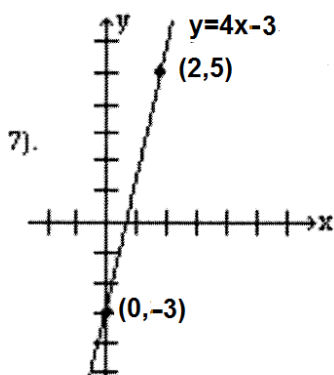
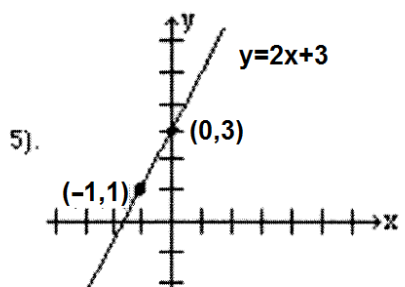
Answers to Odd Numbered Homework Problems at end of sections
and

Answers to all problems in Chapter Review Section

1.1 Graphing a Linear Equation

1). Yes

3). $(2, -6), (6, 6), (0, -12), (4, 0)$



1.2 Slope of a Line

1). $m = 2$

3). $m = 1$

5). $m = -2$

7). $m = \text{undefined}$

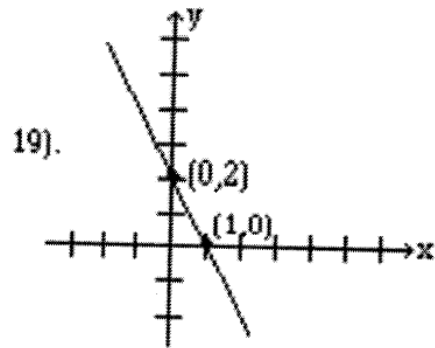
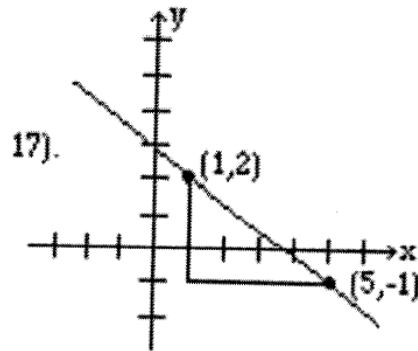
9). $m = -1$

11). $m = -2$

13). $m = 2$

15). $m = 3/4$

1.2 Slope of a Line



1.3 Determining the Equation of a Line

1). $y = 2x + 4$

3). $y = 6x - 13$

5). $y = \frac{2}{5}x - 4$

7). $y = 7x - 32$

9). $y = \frac{5}{2}x - 10$

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). $y = \frac{2}{5}x$; 68

9). $y = 7x - 338$; 138

11). $F = \frac{9}{5}C + 32$; 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 ads, 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 Review Problems

- 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). $y=9/5x+32$
 - 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
- 22) $y=5000x-9670000$ if using x = calendar year
 $y=5000x+280000$ if using x = years since 1990
In 2020, price of house is $\$430,000$

1.6 Review Problems

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