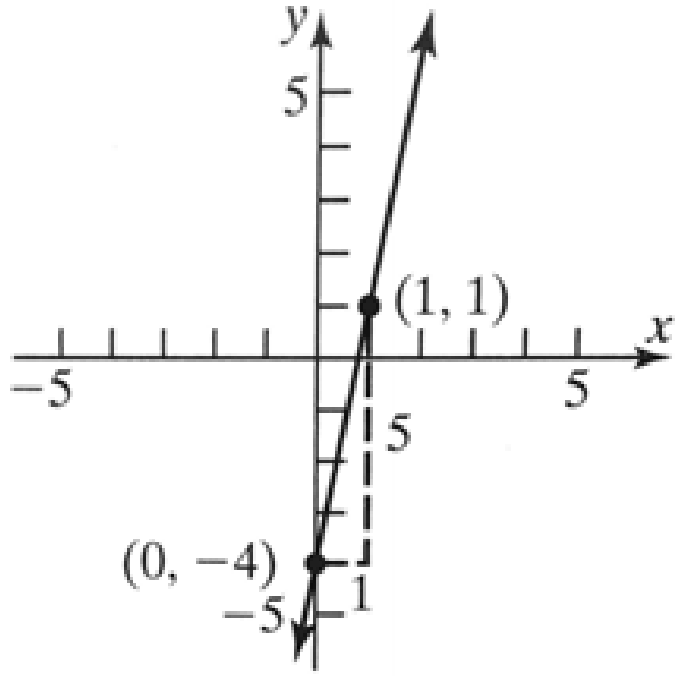
Homework Due Today

p.132 #14, 16, 20, 22, 24, 29, 31

Homework Answers...

14. **(a)** $m = 5; b = -4$

(b)

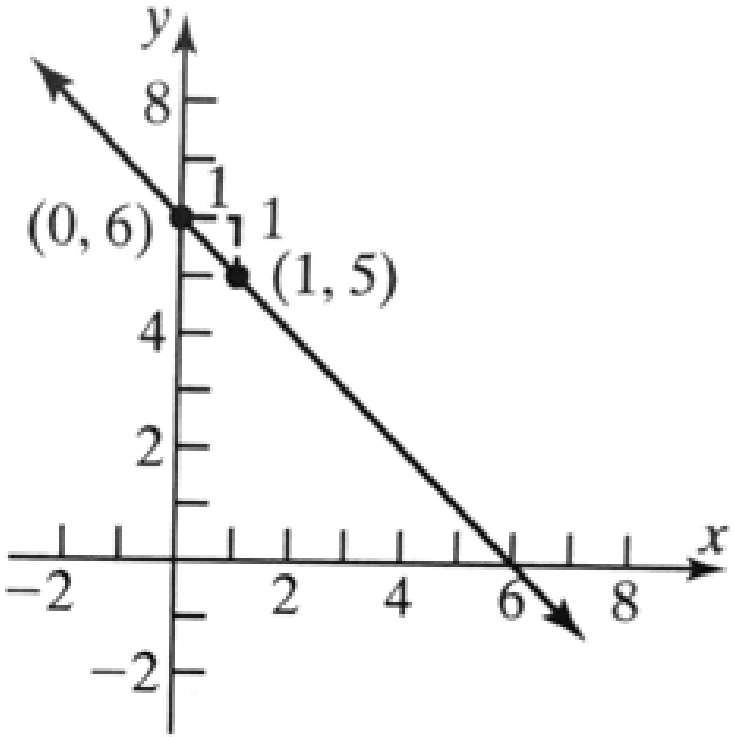


(c) Domain and Range: $(-\infty, \infty)$

(d) 5 **(e)** Increasing

16. **(a)** $m = -1; b = 6$

(b)

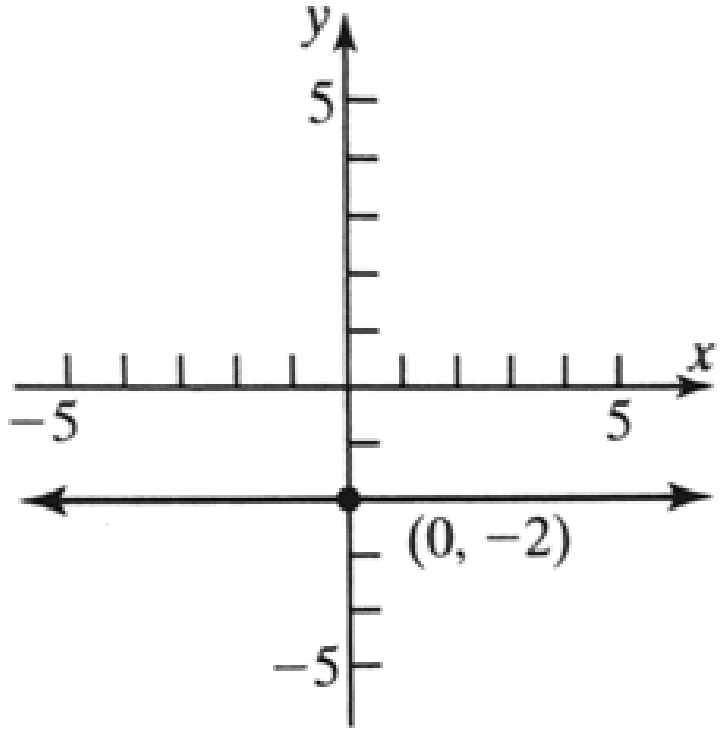


(c) Domain and Range: $(-\infty, \infty)$

(d) -1 **(e)** Decreasing

20. **(a)** $m = 0; b = -2$

(b)



(c) Domain: $(-\infty, \infty)$

Range: $\{y \mid y = -2\}$

(d) 0 **(e)** Constant

22) Nonlinear

24) Linear

y = 4x + 40

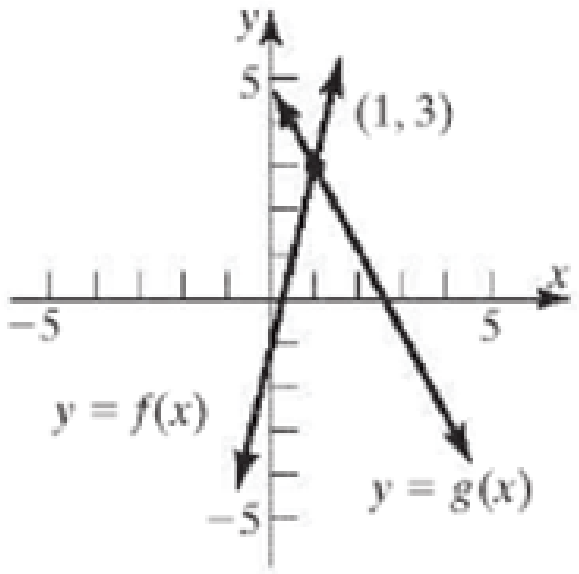
29. (a) $\frac{1}{4}$

(b) $\left\{x \middle| x > \frac{1}{4}\right\}$ or $\left(\frac{1}{4}, \infty\right)$

(c) 1

(d) $\{x|x \leq 1\}$ or $(-\infty, 1]$

(e)



31) (a) 40

(b) 88

(c) -40

(d) {x|x>40} or (40, infinity)

(e) {x|x≤88}

(f) {x| -40<x<88}

Worksheet Answers

21) Linear y= -3x - 2

23) Nonlinear

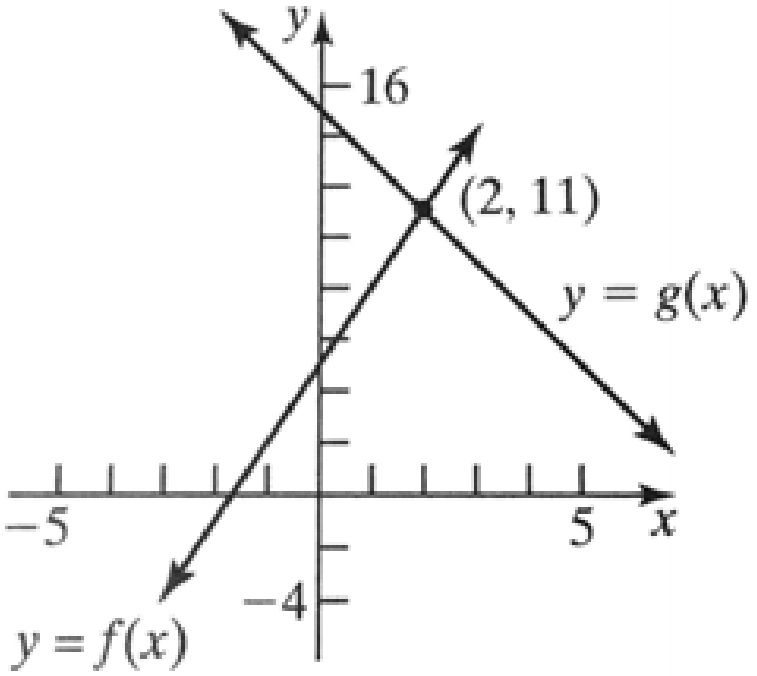
25) Nonlinear

27) Linear y = 8

30. (a) $-\frac{5}{3}$ (b) $\left\{x \middle| x < -\frac{5}{3}\right\}$ or $\left(-\infty, -\frac{5}{3}\right)$

(c) 2 (d) $\{x|x \geq 2\}$ or $[2, \infty)$

(e)



32) (a) 5
(b) -15
(c) 15
(d) $x < 5$
(e) $x \geq -15$
(f) $-15 < x < 15$

34) (a) 2
(b) $x \leq 2$

37) (a) $45
(b) 180 miles
(c) 260 miles
(d) $x \geq 0$

SECTIONS 3.3A

SOLVING QUADRATICS

What is a Quadratic Equation?

$$ax^2+bx+c=0$$

$$a\neq 0$$

Solve by Factoring

A M

$x^2 - 14x + 49 = 0$

$(x-7)(x-7) = 0$

$x-7=0 \quad x-7=0$

$x=7 \quad x=7$

Solve by Factoring

A M

$x^2 + 5x + 6 = 0$

$(x+2)(x+3) = 0$

$x+2=0$ | $x+3=0$

$x=-2$ | $x=-3$

Solve by Completing the Square

Watch Video

Solve by Completing the Square

$x^2 + 6x - 7 = 0$

$+7 \quad +7$

$x^2 + 6x + 9 = 7 + 9$

$\div 2 \rightarrow 3^2 = 9$

$x^2 + 6x + 9 = 16$

$(x+3)(x+3) = 16$

$(x+3)^2 = 16$

$x + 3 = \pm 4$

$x = -3 \pm 4$

$x = 1$

$x = -7$

Solve by Completing the Square

$x^2 + 16x - 22 = 0$

$x^2 + 16x + 64 = 22 + 64$

$x^2 + 16x + 64 = 86$

$(x+8)(x+8) = 86$

$(x+8)^2 = 86$

$\sqrt{(x+8)^2} = \sqrt{86}$

$x + 8 = \sqrt{86}$

$-8 \quad -8$

$x = -8 \pm \sqrt{86}$

Solve using the Quadratic Formula

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$x^2 - 5x - 14 = 0$

$a = 1 \quad b = -5 \quad c = -14$

$$x = \frac{-(-5) \pm \sqrt{(-5)^2 - 4(1)(-14)}}{2(1)}$$

$$x = \frac{5 \pm \sqrt{25 + 56}}{2}$$

$$x = \frac{5 \pm \sqrt{81}}{2} \Rightarrow x = \frac{5 \pm 9}{2}$$

$x = 7 \quad x = -2$

Solve using the Quadratic Formula

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$2x^2 + 3x - 20 = 0$

Work on WS
Will be Collected