Simplify these square roots, if possible. Assume *x* is positive.

a) $\sqrt{60}$

b) $\sqrt{500}$

c) $\sqrt{147}$

d) $\sqrt{44}$

e) $\sqrt{32}$

f) $\sqrt{63}$

g) $\sqrt{144}$

h) $\sqrt{4x^2}$

i) $\sqrt{14x^5}$

j) $\sqrt{75x^{10}}$

k) $\sqrt{18x^9}$

l) $\sqrt{x}\sqrt{x}$

Completing the Square

Complete the square

a) $x^2 + 8x +$ _____

b) $x^2 - 12x +$ _____

c) $x^2 + 13x +$ _____

d) $x^2 - 5x +$ _____

e) $x^2 + x +$ _____

f) $x^2 - 36x +$ _____

g) $2x^2 + 8x +$ _____

h) $5x^2 - 30x +$ _____

i) $3x^2 + 4x +$ _____

j) $7x^2 - 10x +$ _____

k) $11x^2 + x +$ _____

l) $8x^2 - 19x +$ _____

Solving Quadratic Equations

Solve each. Choose a method that is appropriate and efficient.

a) $x^2 + 14x = -42$

b) $2x^2 = 100$

c) $2x^2 - 5x = 3$

d) $x^2 + 7x + 5 = 0$

e) $2x^2 + 9x = -8$

f) $x^2 = 120$

g) $x^2 - 3x = 28$

h) $x^2 - 8x - 21 = 0$

i) $x^2 + 10x = 5$

j) $3x^2 - 11 = 0$

k) $x^2 - 3x = 6$

l) $3x^2 + x - 4 = 0$

m) $3x^2 + 4x - 6 = 0$

n) $6x^2 - 11x - 10 = 0$

o) $x^2 - 2x - 9 = 0$

p) $x^2 - 81 = 0$

1) Graph each line. No calculator
a) $x = 8$
b) $y = 3$
c) $y = 0$
d) $x = 0$

2) Graph each line. NC
a) $y = x + 9$
b) $y = 3x - 4$
c) $y = \frac{2}{3}x + 2$
d) $y = -\frac{1}{6}x - 4$

3) Graph each line. NC
a) $3x + 7y = 31$
b) $-x + 8y = 10$
c) $2x + 3y = -15$
d) $3x - 5y = 22$

4) Find the equation of the line through…. NC
a) (8, 6) and (–2, 6)
b) (–2, –1) and (–2, 11)
c) (0, 3) and (9, –1)
d) (0, –7) and (–2, –8)
e) (0, 0) and (9, 8)

5) Find the equation of the line through…. NC
a) (8, 3) and (10, 1)
b) (–3, –7) and (7, 2)
c) (4, –1) and (12, 0)
d) (–1, 7) and (8, –10)

6) Find the intercepts of… NC
a) $y = 2x + 9$
b) $3y + 8x = -11$
c) $6x + 7y = 14$
d) $2x - 5y = 18$
e) $x = 9$
f) $y = -7$