Lesson 10.2.2

10-57. **a.** two solutions **b.** $x = 3 \pm \sqrt{12}$ **c.** ≈ 6.46 or -0.46

10-58. Reminder. the scope of this course is limited to real numbers.
a. two solutions. $-4 \pm \sqrt{20}$ **b.** no solution **c.** two solutions. 5 or –2
d. one solution. $\frac{1}{2}$ $= .5, -8.5$ **e.** no solution **f.** one solution. –11

10-59. **a.** no solution **b.** one solution **c.** two solutions

10-60. **a.** Two solutions because $2x - 5$ can equal 9 or –9
b. Looking inside offers a quick solution.
c. Since $2x - 5 = 9$ or –9, then $x = 7$ or $x = -2$.

10-61. **a.** Answers vary $|ab| =$ neg # $\rightarrow$ N.S. $\rightarrow |abs| = 0$ one sol
b. Answers vary, but it should contain an absolute-value expression equal to zero.

10-63. **a.** $x = 3$ or -11 **b.** $x = 14$ **c.** $x = 2$ **d.** $x = 2$

10-64. No, because –1 is not greater than –1.

10-65. **a.** $\frac{x+4}{4x-3}$ **b.** $\frac{m+5}{m+4}$

10-66. **a.** $(3x-1)(3x-1)$ **b.** $7 \cdot 7 \cdot 7 \cdot 7$ **c.** $m \cdot m \cdot m$
d. $w \cdot w \cdot w \cdot w \cdot w \cdot w \cdot w \cdot w \cdot w$

10-67. **a.** $4x(x-3)$ **b.** $3(y+1)^2$ **c.** $(2m+1)(m+3)$ **d.** $(3x-2)(x+2)$

10-68. $t =$ number of toppings, $1.19(3) + 0.49t = 4.55$, and $t = 2$

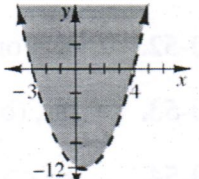
Lesson 10.2.3

10-69. **a.** $x = 4$ or -6 **b.** $x = 15$ **c.** $x = 53$ **d.** $x = -3$ or -7
e. $x = -15$ or -9 **f.** $x = 5$ or 11

10-70. If $x =$ the length of a side of the hot tub, then $(x+3)^2 \leq 169$ $x \leq 10$.
However, since the minimum side length is 4 feet, the possible measurements that Ernie can order are $4 \leq x \leq 10$ feet.

$(x+3)^2 \leq 169$

10-71. See graph at right.



(.5, 12.25)

10-72. When any real number is squared, the result is either positive or zero.

10-73. **a.** 7 or 1 **b.** 4 or 8 **c.** 3 **d.** no solution

10-74. **a.** $x < 2$ **b.** $x \geq 6$ **c.** $x > 4$ **d.** $x \geq 18$

10-75. **a.** $\frac{x-3}{3x-14}$ for $x \neq \frac{14}{3}, -6$ **b.** $\frac{2x-1}{x+1}$ for $x \neq \frac{3}{4}, -1$ $\frac{1}{2}, 3$ $\frac{1}{3}, -2$

10-76. $5xxxyy$