8-58. Vertex: (4, –9), x-intercepts: (1, 0) and (7, 0), y-intercept: (0, 7)

8-59. See below:

a. 3, –7, 6, –2

b. …it does not change the value of the number.

c. It tells us that $a = 0$.

d. 0, 0, 0, 0

e. ...the result is always 0.

8-60. See below:

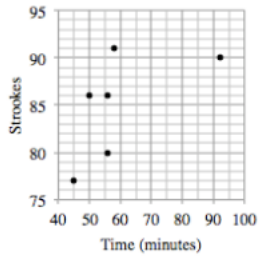
a. x-intercepts (2, 0), (–4, 0), and (3, 0), y-intercept: (0, 18)

b. x-intercepts [ ] and [ ] y-intercept: ( )

c. x-intercept (1, 0) and y-intercept (0, –4)

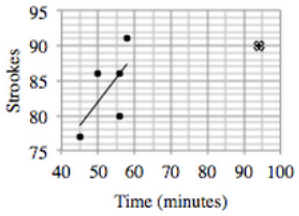
8-61. See below:

a. See scatterplot below. 45 minutes + 77 strokes = 122.



b. There is a weak to moderate positive linear association between Diego's run time and the strokes taken for each match. There looks to be an outlier at 92 minutes.

c. See graph below.



d. Every minute of improvement in time reduces the number of strokes by 0.7 on average.

e. The variables are moderately associated, but that does not mean that one variable causes the other. It does seem reasonable that training for conditioning could improve Diego's aim and confidence in his golf swing, however the potential exists that a better more accurate swing could also reduce the amount of running required on the course. It is not clear what causes what, or if there is a third, lurking, variable.

8-62. See below:

a. no solution

b. (7, 2)

8-63. See below:

a. The symbol "≥" represents "greater than or equal to" and the symbol ">" represents "greater than."

b. $5 > 3$

c. $x \leq 9$

d. –2 is less than 7

8-69. This parabola should have x-intercepts (–3, 0) and (2, 0) and y-intercept (0, –6).

8-70. See below:

a. One is a product and the other is a sum.

b. first: $x = -2$ or $x = 1$; second: $x = -\frac{1}{2}$

8-71. See below:

a. $x = 2$ or $x = -8$

b. $x = 3$ or $x = 1$

c. $x = -10$ or $x = 2.5$

d. $x = 7$

8-72. See below:

a. The line $x = 0$ is the y-axis, so this system is actually finding where the line $5x - 2y = 4$ crosses the y-axis.

b. (0, –2)

8-73. See below:

a. 4; Since the vertex lies on the line of symmetry, it must lie halfway between the x-intercepts.

b. (4, –2)

8-74. See below:

a. $2(x - 2)(x + 1)$

b. $4(x - 3)^2$