11-71. See below:

a. There is a strong positive linear association between the depth of a water well and the cost to install it. There are no apparent outliers.

b. On average, every foot deeper you drill the well, the cost increases by $14.65.

c. The coefficient of correlation is 0.929, R-squared = 0.864. About 86% of the variation in the cost of drilling a water well can be explained by a linear association with its depth.

d. $1395 represents the cost of a well that has no depth. It would be roughly the cost of the pump.

e. 1395 + 14.65(80) = $2567, 1395 + 14.65(150) = $3593, 1395 + 14.65(200) = $4325

f. From part (e), the predicted cost is $2567. Actual – $2567 = $363; actual cost was $2930.

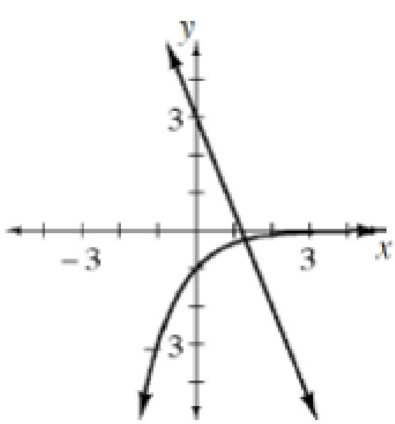
g. A linear model looks the most appropriate because there is no pattern in the residual plot.

11-72. c

11-73. Yes, by HL ≅.

11-74. $|2.5 - x| \leq 0.03x$; $2.425 \leq x \leq 2.57$ grams; the coin is significantly less than this range, so its legitimacy could be questioned, though there may be reasons that it has lost weight since 1924.

11-75. See graph below. $x \approx 1.30$

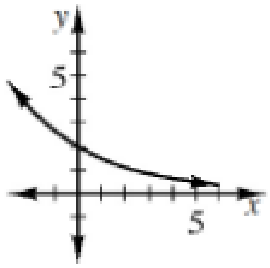


11-76. $\frac{1}{2}+\frac{1}{3}=\frac{1}{x}$ or $\frac{1}{2}x+\frac{1}{3}x=1$; $x=\frac{6}{5}$ hours = $1\frac{1}{5}$ nhours = 1 hour and 12 minutes

11-77. Mr. Greer distributed incorrectly. The correct solution is $x = 2$.

11-78. See below:

a. See graph below.



b. $f(x) = 10(2.3)^x$

c. $y = 42{,}000(0.75)^5 = 9967$

d. $60 = 25(b)^{10}$; $b = 1.09$, 9% increase

11-79. $s = a + 150$, $3s + 5a = 4730$; 685 students