9-58. See solutions below.

a. [Graph showing a straight line]

b. [Graph showing a hyperbola]

9-59. See below:

a. $x = 10$ or $x = -16$

b. $x = -\frac{1}{3}$ or $x = 6 \frac{1}{3}$

c. no solution

9-60. $1200 + 300x \leq 2700$, so $x \leq 5$. Algeria can order an advertisement up to 5 inches high.

9-61. $f(x) = 3(2)^x$

9-62. See below:

a. See graph below. Weight is very strongly positively associated with time in a nonlinear manner with no apparent outliers.

[Graph showing a scatter plot with a trend line]

b. An exponential function is often useful for describing increasing change over the course of time.

c. See graph below. $y = 0.0793(1.679)^x$; the $y$-intercept of $\approx (0, 0.08)$ seems reasonable since a mushroom with no time to grow will weigh almost nothing.
d. 5.02 g

9-63. See below:

a. $2\sqrt{2}$ units

b. $(-1, 6)$. The function would change the $y$-coordinate to $-y$, or more formally, $(x, y) \rightarrow (x, -y)$.

c. $(8, 5)$

d. The translation is a movement 10 units along any line parallel to $y = \frac{3}{4}x$.

9-64. Line L: $y = -\frac{1}{6}x + 6$; line M: $y = \frac{2}{3}x + 1$; point of intersection: $(6, 5)$