3-41. See below.

a. $f = 9$

b. $g = 18$

c. $h = \frac{70}{3}$

3-42. See below.

a. 180° – 38° – 63° = 79° and 180° – 38° – 79° = 63°, corresponding angles are equal.

b. Upon inspection students should know that all unmarked angles are the same since the difference with 180° will be the same.

3-43. See below.

a. Frank: $0.25x + 1.95 = y$; Alice: $0.40x + 1.5 = y$

b. They will be 3 years old.

3-44. See below.

a. If a rectangle has base x and height $2x$, then the area is $2x^2$.

b. If a rectangle has base x and height $3y$, then the perimeter is $2x + 6y$.

c. If a rectangle has base of 2 feet and a height of 3 feet, than the area is 864 square inches.

3-45. In theory, $3 < x < 13$ but students may correctly point out some of these lengths are not practical.

3-46. See below.

a. The coordinates of the image are $A(–6, – 4)$, $B(10, – 4)$, $C(10, 6)$, $D(2, 12)$, and $E(–6, 6)$.

b. Perimeters = 28 and 56 units.; areas = 52 and 208 sq. units