2.6.3 Height: $\frac{1}{2}w$, Length: w, Width: w

$$V = \frac{1}{2}w \cdot w \cdot w = \frac{1}{2}w^3$$

2.6.12 Similar triangles preserve the ratio of the sides, hence

$$\frac{5}{L} = \frac{12}{L+d}.$$

Cross-multiplying, we get $5(L+d) = 12L$; viz.

$$L = \frac{5}{7}d.$$

2.6.14 $P = x(60-x) = 60x - x^2 = -x^2 + 60x$.

2.6.30 (a) Height: x, Length: $12-2x$, Width: $20-2x$

$$V = x(12-2x)(20-2x) = 4x^3 - 64x^2 + 240x.$$

(b) Approximately, $1.1738 < x < 3.898$.

(c) Approximately, 262.682.