

37. (a) Squaring the relation  $1 \text{ ken} = 1.97 \text{ m}$ , and setting up the ratio, we obtain

$$\frac{1 \text{ ken}^2}{1 \text{ m}^2} = \frac{1.97^2 \text{ m}^2}{1 \text{ m}^2} = 3.88 .$$

- (b) Similarly, we find

$$\frac{1 \text{ ken}^3}{1 \text{ m}^3} = \frac{1.97^3 \text{ m}^3}{1 \text{ m}^3} = 7.65 .$$

- (c) The volume of a cylinder is the circular area of its base multiplied by its height. Thus,

$$\pi r^2 h = \pi (3.00)^2 (5.50) = 155.5 \text{ ken}^3 .$$

- (d) If we multiply this by the result of part (b), we determine the volume in cubic meters:  $(155.5)(7.65) = 1.19 \times 10^3 \text{ m}^3$ .