64. \[ A = LW = (0.274 \text{ m})(0.222 \text{ m}) = 6.08 \times 10^{-2} \text{ m}^2. \]

65. \[ r = \frac{d}{2} = \frac{12 \text{ cm}}{2} = 6.0 \text{ cm} = 0.060 \text{ m}. \]
\[ A = \pi r^2 = \pi (0.060 \text{ m})^2 = 1.1 \times 10^{-2} \text{ m}^2. \]

66. \[ V = a^3, \quad a = \sqrt[3]{V} = \sqrt[3]{2.5 \times 10^{-2} \text{ cm}^3} = 6.3 \text{ cm}. \]

67. (a) Three, since the height has only three significant figures.
(b) The area is the sum of that of the top, the bottom, and the side. The side of the can is a rectangle with a length equal to the circumference and width equal to the height of the can.
\[ A = \frac{\pi d^2}{4} - \frac{\pi d^2}{4} - Ch = \frac{\pi d^2}{4} + \frac{\pi d^2}{4} + (\pi d)h \]
\[ = \frac{\pi (12.559 \text{ cm})^2}{4} + \frac{\pi (12.559 \text{ cm})^2}{4} = \pi (12.559 \text{ cm})(5.62 \text{ cm}) = 470 \text{ cm}^2. \]

68. (a) Zero, since 38 m has zero decimal place.
(b) \[ 46.9 \text{ m} - 5.72 \text{ m} - 38 \text{ m} = 15 \text{ m}. \]

69. (a) \[ v = \frac{x}{t} = \frac{8.5 \text{ m}}{2.7 \text{ s}} = 3.1 \text{ m/s}. \]
\[ p = mv = (0.66 \text{ kg})(3.1 \text{ m/s}) = 2.0 \text{ kg m/s}. \]
(b) \[ \rho = \frac{mx}{t} = \frac{(0.66 \text{ kg})(8.5 \text{ m})}{2.7 \text{ s}} = 2.1 \text{ kg m/s}. \]
(c) No, the results are not the same. The difference comes from rounding.

70. (a).

71. (c).

72. No. Order of magnitude calculation is only an estimate of the approximate value.

73. According to Pythagorean theorem, \[ c = \sqrt{a^2 + b^2} = \sqrt{(37 \text{ m})^2 + (42.3 \text{ m})^2} = 56 \text{ m}. \]