SPH3U

Measurement Worksheet #2

ANSWERS

Date: _____

Applying the Weakest Link Rules

1. Perform the following calculations. Keep the correct number of significant digits in your answer. Use scientific notation if necessary.

a) 22 m x 127 m = 2800 m^2

b) 3.46 cm + 12 cm + 6.70 cm + 9.4 cm = 32 cm

c) 9.5 cm x 21.65 cm x 35 cm = 7200 cm^3

d) 2.6 kg + 18 kg + 5.375 kg = 26 kg

e) 15.5 cm - 8.215 cm + 2.35 cm= 9.6 cm

f) $127.5\ km \div 0.64\ h$ = 2.0×10^2 km/h

g) (0.0060 m)(10.2m)(1.54m) = 0.094 m^3

h) 0.055 g -0.0050 g = 0.050 g

i) $(6.5\ cm)^2$= 42 cm^2

2. Find the density of a metal block with a mass of 66.43 g and a volume of 8.7 cm^3 .

(*Density* = $\frac{mass}{volume}$)

$D = \frac{66.43}{8.7} = 7.6\ g/cm^3$

3. Find the average speed of a baseball which travels 16.0 m in 1.4375 seconds.

(*Average speed* = $\frac{distance\ travelled}{time\ taken}$)

$V = \frac{16.0}{1.4375} = 11.1$ m/s

4. ***In Class Activity:***

Measure the length and width of your desktop to the nearest mm (± 0.1 cm) at three different locations. Find the average value for each and state the measurement uncertainty in your average value based on the range of the three measurements.

Width Measurements: _____ _____ _____ Avg. Width: _____

Length Measurements: _____ _____ _____ Avg. Length: _____

mpare your average measurements to your partner's values. Do they agree? Explain.

Use your average values to find the area of your desktop. How many significant digits can you keep in your answer? Round your area value to the correct number of significant digits.