Worksheet 1.3 – Significant Figures

1) Counting sig figs: write down the number of sig figs each piece of data has:

a) 0.0021 m 2

b) 200,000 m^3 1

c) 21.200 s 5

d) 410 kg 2

e) 0.0002 s 1

f) 91.0001 m^2 6

2) Multiplication with sig figs:

a) 92.45 m · 1.01 m = 93.4 m^2

b) 0.0024 N · 4.24 s = 0.10 N·s

c) 4000 kg · 2.001 m/s 8000 kg m/s

e) 0.00698 m^2 · 100 cm = 0.007 m^3

f) 2001 kg · 12.6 m/s = 25200 kg m/s

g) 610 N · 4002 s = 2400 000 N·s

3) Division with sig figs:

a) 12 m ÷ 31.2 s = 0.38 m/s

b) 69.4 kg ÷ 38.888 s = 1.78 kg/s

c) 0.012 m^2 ÷ 0.0002 s = 60 m^2/s

d) 1800 kg ÷ 410 s = 4.4 kg/s

e) 0.102 m ÷ 100 ms = 1 m/s

f) 1001 m^3 ÷ 40 ks = 0.03 m^3/s

4) Addition and subtraction with sig figs:

a) 14 m + 12.2 m = 26 m

b) 0.012 kg + 1.0046 kg – 0.0064 kg = 1.010 kg

c) 12.46 kg + 9.82 kg – 6.666 kg = 15.61 kg

d) 69.45 s + 19.3 s = 88.8 s

e) 200.1 m – 128.28 m = 71.8 m

5) Chain calcs with sig figs: round off to the appropriate number of sig figs **at the end!**

a) (0.045 m · 9.92 kg) ÷ 16.86 s = 0.026 kg m/s

b) (9000 m · 4.01 m) · 1.002 m = 40 000 m^3

c) (0.21 m · 6.23 s) · 1.002 m = 1.3 $m^2 \cdot s$

d) (18.01 m · 0.41 m) ÷ (14.62 kg · 12 s) = 0.042 $\frac{m^2}{kg \cdot s}$