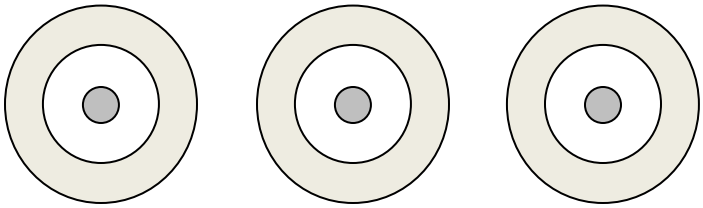
Unit 1: Introduction

3 – Sig Figs

Accuracy:

Precision:



• When making a measurement, the last digit is always _____

• All recorded data is considered _____, however the last digit is deemed _____.

• A measuring instrument generally has a precision of…

Ex.

Measure the width of the bench

The Sig Fig Rules

1) All non-zero numbers…

Ex: 321 has _____ sig figs

2) Zeroes that occur…

Ex: 1001 has _____ sig figs

3) In a non-decimal number…

Ex: 5200 has _____ sig figs

4) Zeroes to the left…

Ex: 0.0085 has _____ sig figs

5) In a decimal number…

Ex: 0.2500 has _____ sig figs

Examples: How many sig figs are in each number?

1) 1500 2) 2021 3) 0.34 4) 0.0039

5) 50 000 6) 0.800 7) 0.000360 8)1200.00

Multiplying and Dividing

• When multiplying or dividing numbers, our final answer is always …

Ex: 350 x 1.15 =

200.0 x 150 =

0.002695 x 100 =

Adding and Subtracting

• When adding or subtracting numbers, our final answer is always …

Ex: 25 + 57.65 =

0.6851 – 0.337 =

5.024 – 5.01 =

Worksheet 1.3 – Significant Figures

1) <u>Counting sig figs:</u> write down the number of sig figs each piece of data has:

   a) 0.0021 m
   b) 200,000 m^3
   c) 21.200 s
   d) 410 kg
   e) 0.0002 s
   f) 91.0001 m^2

2) <u>Multiplication with sig figs</u>:

   a) 92.45 m · 1.01 m =
   b) 0.0024 N · 4.24 s =
   c) 4000 kg · 2.001 m/s
   e) 0.00698 m^2 · 100 cm =
   f) 2001 kg · 12.6 m/s =
   g) 610 N · 4002 s =

3) <u>Division with sig figs:</u>

   a) 12 m ÷ 31.2 s =
   b) 69.4 kg ÷ 38.888 s =
   c) 0.012 m^2 ÷ 0.0002 s =
   d) 1800 kg ÷ 410 s =
   e) 0.102 m ÷ 100 ms =
   f) 1001 m^3 ÷ 40 ks =

4) <u>Addition and subtraction with sig figs</u>:

   a) 14 m + 12.2 m =
   b) 0.012 kg + 1.0046 kg – 0.0064 kg =
   c) 12.46 kg + 9.82 kg – 6.666 kg =
   d) 69.45 s + 19.3 s =
   e) 200.1 m – 128.28 m =

5) <u>Chain calcs with sig figs:</u> write down the number of sig figs each piece of data has:

   a) (0.045 m · 9.92 kg) ÷ 16.86 s =

   b) (9000 m · 4.01 m) · 1.002 m =

   c) (0.21 m · 6.23 s) · 1.002 m =

   d) (18.01 m · 0.41 m) ÷ (14.62 kg · 12 s) =