

ROUNDING

HOMEWORK:

Page 13-1G:all & page 15-1H: all & page 17-1I: all & page 18-Exams questions 1+2

Main Rule

- Rounding up: "adding 1" when "next digit" ≥ 5
➤ Ex: 3.234675
- Rounding down: "stays the same" when "next digit" < 5
➤ Ex: 3.234674 $or \leq 4$
- Making sense: This applies to word problems. In a real life situation your rounding needs to make sense.
➤ Ex: a group of 22 friends are going surfing and the cars fit 5 people each. How many cars will be needed to travel from DAA to the beach?

$$\# \text{ cars} = \frac{22}{5} = 4.4$$

You need 5 cars

Decimal Places: (d.p.)

- Digits after the decimal point:

- Given the number 12345.6789098

1. Round to 6 d.p.

You round the second 9, bc you have an "8" after you must round up.

12345.678910

2. Round to 3 d.p.

You must round the first 8, bc you have a "9" after, you must round up.

12345.679

3. Round to 1 d.p.

12345.7

You must round the 6, and bc you have a "7" after, you must round up.

Significant Figures: (s.f.)

- In IB, unless otherwise specified, you always give your answer to 3 s.f.

- Given the number:

12345.67890123

- Round to 5 s.f.

12346

- Round to 3 s.f.

12300

- Tricky cases:

- Big numbers: DO NOT FORGET THE ZEROS

1234567 → 1230000

- Zeros after the decimal point.

Zeros in between digits ARE significant

12035 | 5 s.f.

1.2305 | 5 s.f.

Round the following number to 3 s.f., then to 1s.f.

0.02305 (right now we have 4s.f.)

Answer to 3s.f.

0.0231

Answer to 1s.f.

0.02

Zeros after digits before decimal point ARE NOT significant

12350 | 4 s.f.

0.2305 | 4 s.f.

The zero before the decimal is NOT significant

Tricky
 Round to 3 s.f
 2.298
 Answer: 2.30

Words

- “One” or Integer: This includes “units” and “currency”
 - For example: To the nearest dollar, or to the nearest liter, to the nearest cm^2 1234.5678 round it the the nearest ONE.
1235
- “the magic words”:

➤ Tens: 1234.5678 \Rightarrow 1230

➤ Tenth: (usually IB uses 1 d.p.) 1234.5678 1234.6

➤ Hundred: 1234.5678 \Rightarrow 1200

In IB, most probably, you won't see these; they will use the term “d.p.”

➤ Hundredth: (usually IB uses 2 d.p.) 1234.5678 \Rightarrow 1234.57

➤ Thousand: 1000

➤ Ten-thousand: ~~X~~