Guide to: Rounding

maths Links

Explanation:

To round any number, find the target accuracy column and draw a vertical cut-off line immediately to its right. Look at the **decider digit** just after the line: if it is **5 or more** (5, 6, 7, 8, 9), round the target digit **up by 1**; if it is **4 or less** (0, 1, 2, 3, 4), keep the target digit the same.

For **decimal places (d.p.)**, count digits after the decimal point. For **significant figures (s.f.)**, start counting from the very first **non-zero** digit on the left, and use placeholder zeros for whole numbers if needed to keep the place value.

Example 1: Round **64 839** to:
(a) the nearest **100** (b) **2 significant figures**

Solution:

(a) Hundreds digit is 8: 64 8 | **3**9
• Decider digit is 3 (< 5), so 8 stays 8 → **64 800**
(b) 2nd s.f. is 4 (thousands): 64 | **8**39
• Decider is 8 (≥ 5), round 4 up to 5 and fill zeros → **65 000**

Answers: (a) 64 800 (b) 65 000

Example 2: Round **0.07854** to:
(a) **2 decimal places** (b) **2 significant figures**

Solution:

(a) 2nd digit after point is 7: 0.07 | **8**54
• Decider is 8 (≥ 5), so 7 rounds up to 8 → **0.08**
(b) First non-zero digit is 7, so 2nd s.f. is 8: 0.078 | **5**4
• Decider is 5 (≥ 5), so 8 rounds up to 9 → **0.079**

Answers: (a) 0.08 (b) 0.079

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