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|  **Topic: Accuracy**

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| **Topic/Skill**  | **Definition/Tips**  | **Example**  |
| 1. Place Value  | The **value** of where a **digit** is within a number.  | In 726, the value of the 2 is 20, as it is in the ‘tens’ column.  |
| 2. Place Value Columns  | The names of the columns that **determine the value of each digit**.  The ‘ones’ column is also known as the ‘units’ column.  |   |
| 3. Rounding  | To make a number simpler but keep its value close to what it was.  If the **digit to the right** of the rounding digit is **less than 5, round down**. If the **digit to the right** of the rounding digit is **5 or more, round up**.  | 74 rounded to the nearest ten is 70, because 74 is closer to 70 than 80.  152,879 rounded to the nearest thousand is 153,000.  |
| 4. Decimal Place  | The **position** of a digit to the **right of a decimal point**.    | In the number 0.372, the 7 is in the second decimal place.  0.372 rounded to two decimal places is 0.37, because the 2 tells us to round down.  Careful with money - don’t write £27.4, instead write £27.40  |
| 5. Significant Figure  | The significant figures of a number are the digits which **carry meaning** (ie. are significant) to the size of the number.  The **first significant figure** of a number **cannot be zero**.  In a number with a decimal, trailing zeros are not significant.  | In the number 0.00821, the first significant figure is the 8.  In the number 2.740, the 0 is not a significant figure.  0.00821 rounded to 2 significant figures is 0.0082.  19357 rounded to 3 significant figures is 19400. We need to include the two zeros at the end to keep the digits in the same place value columns.  |
| 6. Truncation  | A method of approximating a decimal number by **dropping all decimal places** past a certain point **without rounding**.  | 3.14159265… can be truncated to 3.1415 (note that if it had been rounded, it would become 3.1416)  |
| 7. Error Interval  | A **range of values** that a number could have taken before being rounded or truncated.  An error interval is written using inequalities, with a **lower bound** and an **upper bound**.   | 0.6 has been rounded to 1 decimal place.  The error interval is:  0.55 ≤ 𝑥 < 0.65  The lower bound is 0.55 The upper bound is 0.65  |

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|  | Note that the lower bound inequality can be ‘equal to’, but the upper bound cannot be ‘equal to’.  |  |
| 8. Estimate  | To find something **close to the correct answer**.  | An estimate for the height of a man is 1.8 metres.  |
| 9. Approximation  | When using approximations to estimate the solution to a calculation, **round each number in the calculation to 1 significant figure**.  ≈ means ‘approximately equal to’  |  0.526 0.5348+692≈300+700=2000 ‘Note that dividing by 0.5 is the same as multiplying by 2’  |
| 10. Rational Number  | A number of the form 𝒑**,** where 𝒑 **and** 𝒒 **are** 𝒒**integers** and 𝒒 ≠ 𝟎.  A number that cannot be written in this form is called an ‘irrational’ number  |   |
| 11. Surd  | The **irrational number** that is a **root of a positive integer,** whose value cannot be determined exactly.  Surds have **infinite non-recurring decimals**.  |  is a surd because it is a root which cannot be determined exactly.   … which never repeats.  |
| 12. Rules of Surds  |  𝒂  𝒂  |      |
| 13. Rationalise a Denominator  | The process of rewriting a fraction so that the **denominator contains only rational numbers**.  |   |

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