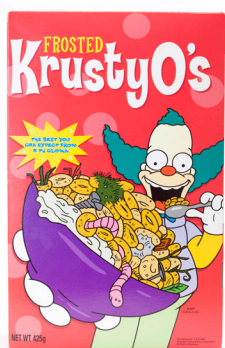 **Practice – Part 1**

**Instructions:** Answer each of the following practice questions on a separate piece of paper. Step by step solutions are provided under the Solutions tab. You will learn the material more thoroughly if you complete the questions before checking the answers under the Solutions tab in Moodle.

1.  Write the maximum and minimum values represented by each of the following dimensions.

    a.  $2.835 \text{ mm} \pm 0.025 \text{ mm}$
    b.  $7 \text{ g} \pm 0.6 \text{ g}$

2.  A $600 \text{ V}$ voltmeter has a minimum allowable measurement of $590 \text{ V}$ and a maximum allowable measurement of $610 \text{ V}$.

    

    a.  Determine the tolerance of the voltmeter.
    b.  Record the measurement of the voltmeter in two different ways.

3.  The box of cereal has a mass of $425 \text{ g}$ with an allowance tolerance of $8 \text{ g}$. What is the acceptable range of mass for the cereal in the box?

4. Jeans are generally sold based on the waist measurement with a tolerance of $0.5$ inch.



What are the maximum and minimum allowable waist measurements that can be labelled as $33$ inch jeans?

5. A Smartie has a nominal value of $0.89$ g and a tolerance of $0.04$ g. Lucas measures the mass of six Smarties and records them in the table below.

| Coloured Smartie | Mass (g) |
|---|---|
| pink | 0.88 |
| red | 0.92 |
| orange | 0.90 |
| purple | 0.87 |
| brown | 0.85 |
| green | 0.91 |



   a. Determine the maximum and minimum acceptable masses of a Smartie.
   b. Which colour(s) of Smarties fall within the acceptable range?
   c. Which colour(s) of Smarties do not fall within the acceptable range? Explain.