

## Exercise 60

The label on a box of cereal gives the mass of cereal in two units: 978 grams and 34.5 oz. Use this information to find a conversion factor between the English and metric units. How many significant figures can you justify in your conversion factor?

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### Solution

In order to find the number of grams in one ounce, divide 978 grams by 34.5 oz.

$$\frac{978 \text{ g}}{34.5 \text{ oz}} \approx 28.3 \text{ grams per ounce}$$

Since there are three significant figures in each measurement, the final answer is rounded to three significant figures. Alternatively, to find the number of ounces in one gram, divide 34.5 oz by 978 grams.

$$\frac{34.5 \text{ oz}}{978 \text{ g}} \approx 0.0353 \text{ ounces per gram}$$