Capacity and Volume Conversions

1. A punch recipe requires 2 US pints of soda. How many mL are needed for the recipe?

$$\frac{y}{2\ pt} = \frac{473\ mL}{1\ pt}$$

$$\frac{y}{\cancel{2\ pt}} \times \cancel{2\ pt} = \frac{473\ mL}{\cancel{1\ pt}} \times 2\ \cancel{pt}$$

$$y = 946\ mL$$

A total of 946 mL of soda are needed for the punch recipe.

2. A punch recipe requires 946 mL of soda. How many UK pints are needed?

$$\frac{y}{946\ mL} = \frac{1\ pt}{568\ mL}$$

$$\frac{y}{\cancel{946\ mL}} \times \cancel{946\ mL} = \frac{1\ pt}{\cancel{568\ mL}} \times 946\ \cancel{mL}$$

$$y = 1.7\ pt$$

A total of approximately 1.7 UK pints of soda are needed for the punch recipe.

3. Convert 1.5 cubic yards to cubic metres.

$$\frac{y}{1.5\ yd^3} = \frac{0.765\ m^3}{1\ yd^3}$$

$$\frac{y}{\cancel{1.5\ yd^3}} \times \cancel{1.5\ yd^3} = \frac{0.765\ m^3}{\cancel{1\ yd^3}} \times 1.5\ \cancel{yd^3}$$

$$y = 1.1\ m^3$$

There are approximately 1.1 cubic metres in 1.5 cubic yards.

4. An engine has a volume of 122 cubic inches. What is the volume, in cubic centimetres?

$$\frac{y}{122\ in^3} = \frac{1\ cm^3}{0.061\ in^3}$$

$$\frac{y}{\cancel{122\ in^3}} \times \cancel{122\ in^3} = \frac{1\ cm^3}{0.061\ \cancel{in^3}} \times 122\ \cancel{in^3}$$

$$y = 2\,000\ cm^3$$

The engine's volume is 2 000 cm^3.