KEY

c) Is the ring pure gold? Explain how you arrived at your conclusion.

- not pure, the density is a little low, close though.

8. The units of the chain system of measure, used by surveyors, are as follows:

7.92 inches = 1 link	100 links = 1 chain
10 chains = 1 furlong	80 chains = 1 mile

The distance of the Kentucky Derby, a classic horse race, is 1.25 miles. How is this distance expressed in furlongs? 1.25 mi = ? furlongs mi → chains → f

$$1.25\,\text{mi}\left(\frac{80\,\text{chains}}{1\,\text{mi}}\right)\left(\frac{1\,\text{furlong}}{10\,\text{chains}}\right) = \boxed{10\,\text{furlongs}}$$

9. The displacement (total volume of the cylinders of the engine in a Ford Mustang) is 5.0 L. Convert this to cubic inches. 5.0 L = ? in³ L → mL → cm³ → in³

$$5.0\,\text{L}\left(\frac{1000\,\text{mL}}{1\,\text{L}}\right)\left(\frac{1\,\text{cm}^3}{1\,\text{mL}}\right)\left(\frac{1\,\text{in}}{2.54\,\text{cm}}\right)^3 = 305.1187205\,\text{in}^3$$

$$= \boxed{310\,\text{in}^3}$$

10. A cube that has a length of 1 cm on each side has a volume of 1 cm^3. How many cubic centimeters are in 1 cubic meter? $1\,m^3 = ?\,cm^3$ $m^3 \rightarrow cm^3$

$$1\,\text{m}^3\left(\frac{100\,\text{cm}}{1\,\text{m}}\right)^3 = \boxed{1.0\times10^6\,\text{cm}^3}$$