Question 1:

Convert the following quantities to $\frac{m}{s}$ (Remember to refer to the conversion table)

1. $6004\frac{ft}{h}$

2. $312300\frac{cm}{h}$

3. $5\frac{km}{h}$

4. $10^3\frac{mi}{h}$

5. $566\frac{in}{min}$

Question 2:

At the University of Waterloo, students may begin to feel nervous if during an exam, someone manages to complete it after 5 minutes. Lets say the fastest problem solver in the exam room is student X, who solves problems at a rate of $120\frac{\text{problems}}{\text{h}}$. Determine weather or not the students in the exam room will feel nervous or not, completely justify your answer.

Question 3:

Daniel has recently ran into a potentially lucrative opportunity, he happened to come across 60 carrots of gold. He wants to know how many coffees he can order. He knows the following information,

- 1 carrot of gold = 0.5 brits

- 1 brit = 6000 USD

- 1 USD = 1.25 CAD

- 1 coffee = 2 CAD

Help him determine the number of coffees he can order.

Question 4:

(**CHALLENGE WARNING**) A mechanical engineering student over at the University of Waterloo wants to know the amount of energy he will need in order to weld a 6 rods of steel. He knows that each rod of steel has a density of $650 \, \text{kg}/\text{m}^3$ and a Calorific Value of 6 kWh/ kg. Determine the amount of energy (**In Kila Jouls**) 6 rods of steel will require. Make note of the following,

- 1 rod of steel has a volume of $100 \, \text{ft}^3$

- $1 \, \text{BTU} = 2.931 \times 10^{-4} \text{kWh}$

- $1 \, \text{J} = 9.4782 \times 10^{-4} \, \text{BTU}$

- $1 \, \text{k J} = 1000 \, \text{J}$