Homework #6: Floating Point Numbers and Arithmetic

1. (10 pts each) Convert the following decimal number into floating point notation:
   a. -168.28
   b. 32.20
   c. 127.325

2. (15 points) Add the two floating point numbers:
   
   $\begin{array}{c}
   0xC9FE0000 \\
   + \quad 0x42453100 \\
   \end{array}$

3. (15 points) Multiply these two floating point numbers:
   
   $\begin{array}{c}
   0xC9FE0000 \\
   \times \quad 0xC3888000 \\
   \end{array}$
4. (20 points) Write HC11 assembly to take a number in register A and an exponent in register B and return the result in register D. \((D = A^{**}B)\)

5. (10 points) Microcontrollers, using GOOGLE, find a Microcontroller with the following minimal specifications, find the price/quantity breakdown.

   a. (5 points) For a new Smart Card Device, an 8-bit RISC processor, USB interface, 64KB flash, and at least 6K EEPROM

   b. (5 points) Microcontroller to make a control unit (GPS, MP3, etc..) at least 20MHz, 8-bit, 16KB Flash memory, 4KB Ram, at least one 16-bit timer.