PROBLEM SOLVED

MAKING SENSE OF MATHEMATICS

After watching the video, *Making Sense of Logarithm Properties*, complete the following problems.

1. Find a number a such that $\log(1000a) = a + \log(a)$

2. Using a calculator, compute the following to four decimal places:
   a. log(1.357114)

   b. log(13.57114)

   c. log(135.7114)

   d. log(1357.114)

   e. log(13571.14)

   f. log(135711.4)

   g. log(1357114)

   What pattern do you notice? Explain why this is true.

3. Find decimal approximations for the following quantities, using a calculator only when needed.
   a. log (3) $\log(\frac{1}{3})$

   b. log (2) $\log(\frac{1}{2})$

   c. Prove: $\log\left(\frac{1}{a}\right) = -\log a$

4. Prove: $\log\left(\frac{a}{b}\right) = \log a - \log b$

MakingSense