Review Problems for Exam 1

1. Do these problems
   - Chapter 5.3 number 5
   - Chapter 5.12 numbers 18, 24, 34, 43
   - Chapter 5.14 numbers 4, 19
   - Chapter 5.16 numbers 1ac

2. Find these limits using L'Hopital’s Rule.
   (a) \( \lim_{t \to 1} \frac{t^3 - 1}{4t^3 - t - 3} \)
   (b) \( \lim_{x \to 0} \frac{\sin x^2}{x} \)
   (c) \( \lim_{t \to 0} \frac{t(1 - \cos t)}{t - \sin t} \)

3. Suppose that \( A, U \) and \( b, v \) are positive numbers with \( \log_4 A = b \) and \( \log_5 U = v \). Express the following in terms of \( b \). Simplify as much as possible.

   \( \log_2 A^{2U} \)

4. Please, look at the exponential and logarithm problems from Homework 5, due Feb 22nd.