

Intermediate Algebra - Math 98 Final Exam
Take-Home Questions - due Thursday 8/16

These 3 questions are due by the beginning of the final exam on Thursday. They will be worth 12% of the total exam score.

1. (4 pts.) Using the properties of logarithms, decide if each statement is true or false. Show your reasoning.
 - (a) $\log_7 5 + \log_7 \frac{1}{5} = 0$
 - (b) $\log_{10}(12 + 4) = \log_{10} 12 + \log_{10} 4$
 - (c) $\log_3 12 - \log_3 4 = 1$
 - (d) $\frac{\log_5 2}{\log_5 6} = \frac{1}{3}$

2. (4 pts.) Find each logarithm. Give your answer to 4 decimal places. You will need a scientific calculator for this problem.
 - (a) $\log 27$
 - (b) $\ln 27$
 - (c) $\log_3 27$
 - (d) $\log_8 27$
 - (e) $\log_8 \sqrt{27}$

3. (4 pts.) Solve the following equations. Find the exact answer and then give the answer to 4 decimal places. You will need a scientific calculator for this problem.
 - (a) $10^x = 4$
 - (b) $e^{2x} = 192$
 - (c) $3^x = 5$

Here are some additional problems for practice from these sections. You do not need to submit the following problems on Thursday.

§12.4: 1-11 (Odd), 21, 23, 45-51 (Odd)

§12.5: 1, 2, 5, 6, 7-23 (Odd), 47-55 (Odd)

§12.6: 7-21 (Odd), 25, 27, 45, 47