MATH 1314.003-Spring 2002   Skills Assessment 6.1 Name: *Key*

Write your answers in the place provided. Passing is 4 of 5 answers completely correct. You may retake this test if needed. You may not use calculators, notes, books or the paper of another person on this assessment.

1. Simplify the following expression: $\log_3 9$ $= \log_3 3^2 = 2$

Answer: _____ 2 _____

2. Simplify the expression: $\ln \sqrt{e^3}$ $= \ln e^{3/2} = 3/2$

Answer: _____ $3/2$ _____

3. Solve the equation $4^{x+1} + 3 = 19$

$4^{x+1} = 16 = 4^2$

$x+1 = 2$

$\boxed{x = 1}$

Answer: _____ $x = 1$ _____

4. Solve the equation $3\ln(x+2) = 5$ for x. You can leave 'e' in your answer.

$\ln(x+2) = \frac{5}{3}$

$x+2 = e^{\ln(x+2)} = e^{5/3}$

Answer: _____ $x = e^{5/3} - 2$ _____

5. Make a change of base for $\log_3 17$ so that it can be evaluated by a calculator with a log key.

$\log_3 17 = \frac{\log 17}{\log 3} - \log(17) \div \log(3)$

Answer: _____ $\frac{\log 17}{\log 3}$ _____