

Math 195 Quiz 9A

April 29, 2019

Name: _____

Instructions: No calculators! Answer all problems in the space provided! Do your rough work on scrap paper.

1. Complete the following rules:

(a) $x^n \cdot x^m =$ _____ (b) $x^{-a} =$ _____ (c) $x^{m/n} =$ _____ (d) $\frac{x^n}{x^m} =$ _____

(e) $x^2 - y^2 =$ _____ (f) $x^3 - y^3 =$ _____

2. Graph the following, indicate all intercepts and asymptotes, provided they exist. Show their values on your sketch:

(a) $y = e^x$

(b) $y = \ln x$

(c) $y = 3^{-x}$

(d) $y = -\ln(x + 1) + 2$

(e) $y = (1 - x)(2 - x)(x + 1)^2$

Bonus (after attempting the problems above, do these for extra credit):

1. Simplify: $e^{\ln x^2 - 5 \ln y} =$ _____

2. Solve for x : $\ln x = 9 \Rightarrow x =$ _____

3. Suppose a bank account grows at an interest rate of r per year, and suppose the interest is compounded continuously. If $P(t)$ represent the balance in the account after time t , and the initial principal is P_0 , write down a formula for $P(t)$:

$P(t) =$ _____