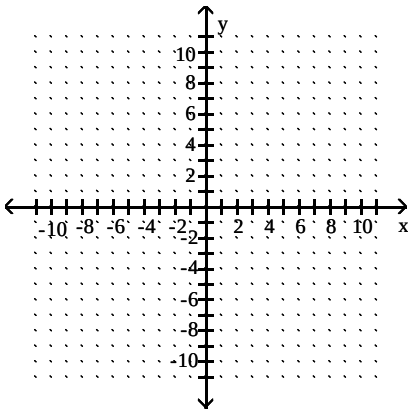
M122 EXAM 3 Chapter3b Part 1 SCORE____ NAME_____
Fall 2007 100

Directions: Show all work on this test paper. Each problem is worth 4 point unless stated otherwise You may NOT use a calculator on the first part of the test. When you finish with Part 1 turn it in and pick up Part 2. You may then use your calculator.

Graph the function.

1) $f(x) = -4^x$ 1)



Write the logarithmic equation in exponential form.

2) a) $\log_2 \frac{1}{8} = -3$ b) $\ln x = 4$ 2) a. _____

b. _____

Write in logarithmic form.

3) a) $4^{-3} = \frac{1}{64}$ b) $32^{1/5} = 2$ 3) a. _____

b. _____

Find the value of the logarithm without using a calculator.

4) a) $\log_5 \frac{1}{25}$ b) $\log_8 32$ 4) a. _____

b. _____

Find the inverse of the function.

5) $f(x) = 5^x$ 5) _____

Solve the equation.

6) a) $\log_{1/3} x = -4$ b) $\log_x 64 = 3$ 6) a. _____

b. _____

Use the properties of logarithms to evaluate the expression.

7) a) $\ln e^3$ b) $e^{\ln 42}$ 7) a. _____

b. _____

Solve.

8) Let $\log_b A = 2.8$ and $\log_b B = 3.6$ **find**: 8) a. _____

a) $\log_b AB$. b. _____

b) $\log_b \frac{A}{B}$.

Rewrite the expression as the sum and/or difference of logarithms, without using exponents. Simplify if possible.

9) $\log_9 \frac{14\sqrt{r}}{s}$ 9) _____

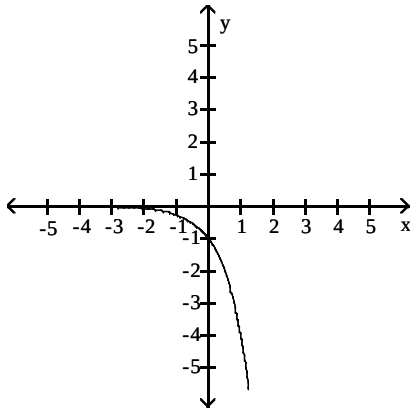
Rewrite as a single logarithm.

10) $6 \log_t t - \log_t s$ 10) _____

Solve the equation. Give an exact solution.

11) $\log_4 (x - 8) + \log_4 (x - 8) = 1$ 11) _____

1)



2) $2^{-3} = \frac{1}{8}$ $e^{4} = x$

3) $\log_4 \frac{1}{64} = -3$ $\log_{32} 2 = \frac{1}{5}$

4) -2 $\frac{5}{3}$

5) $f^{-1}(x) = \log_5 x$

6) 81 4

7) 3 42

8) 6.4, −0.8,

9) $\log_9 14 + \frac{1}{2} \log_9 r - \log_9 s$

10) $\log_t \frac{t^6}{s}$

11) 10