

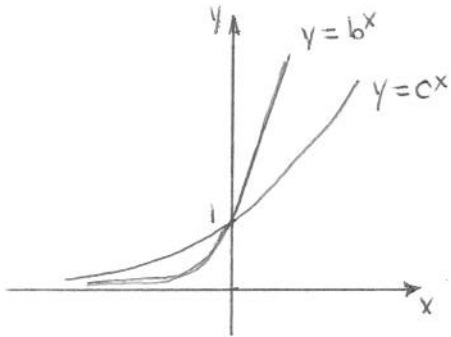
MATH 1143 QUIZ 3
OCTOBER 26, 2011

Instructions. Be sure to show your work! A correct solution with no supporting work might receive no credit. Give numerical answers in exact form, such as $5/7$ or $3\sqrt{5}$, unless the problem asks for a decimal approximation. There are 10 points altogether.

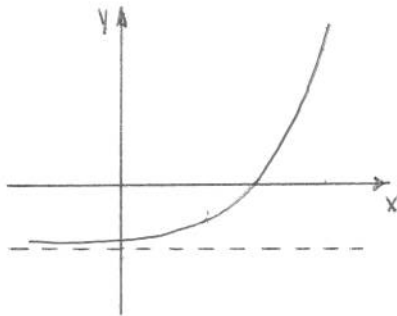
(2 pts) 1. Graphs $y = b^x$ and $y = c^x$ are given below. Which one of the following holds? Circle your choice:

$1 < b < c$ $b < 1 < c$ $b < c < 1$ $1 < c < b$ $c < 1 < b$ $c < b < 1$

Now add the graph $y = b^{-x}$ to the sketch.



(3 pts) 2. The function $y = 3^{x-2} - 1$ is graphed below. Determine the domain and range, the intercepts in exact form, and the asymptote. Note: An asymptote is a line.



Domain:

Range:

Exact x -intercept:

Exact y -intercept:

Asymptote:

(2 pts) 3. Write the equation $\log_3 x = -2$ in exponential form, and give the solution.

(2 pts) 4. Write the equation $e^{2t} = 4.6$ in logarithmic form. Then give the solution in exact form, and finally use your calculator to determine the solution to three decimal places.

(1 pt) 5. Which is larger, $\log_2 5$ or $\log_5 10$? Explain your reasoning; I am more interested in your reasoning than in the answer itself.