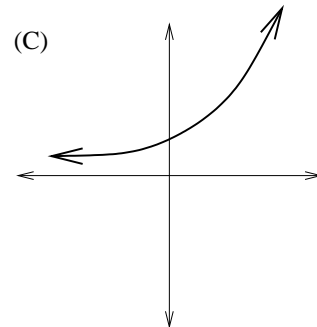
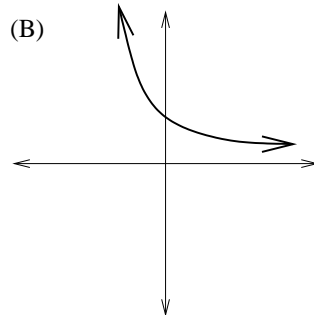
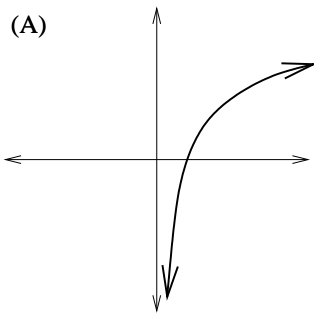


MATH 1090-8: QUIZ 7
no calculators allowed!
 November 1, 2007

1. By entering the entries A, B, and C in the following table, match the graphs



with the following equations

- (1) $f(x) = 2^x$.
- (2) $f(x) = 2^{-x}$.
- (3) $f(x) = \log_2(x)$.

(1) C || (2) B || (3) A

2. TRUE or FALSE (circle one):

$$\log_2(0.125) = -3.$$

3. Given that

$$\log_a(x) = 2 \quad \log_a(y) = 3 \quad \log_a(z) = 6$$

evaluate the following expressions:

(a) $\log_a\left(\frac{x\sqrt[3]{z^2}}{y}\right)$.

$$\begin{aligned} &= \log_a(x\sqrt[3]{z^2}) - \log_a(y) = \log_a(x) + \frac{2}{3}\log_a(z) - \log_a(y) \\ &= 2 + \frac{2}{3}(6) - 3 = 3. \end{aligned}$$

(b) $\log_a\left(\sqrt{\frac{x}{yz^2}}\right)$.

$$\begin{aligned} &= \frac{1}{2}\log_a\left(\frac{x}{yz^2}\right) = \frac{1}{2}(\log_a(x) - \log_a(y) - 2\log_a(z)) \\ &= \frac{1}{2}(2 - 3 - 2 \cdot 6) = -\frac{13}{2}. \end{aligned}$$