

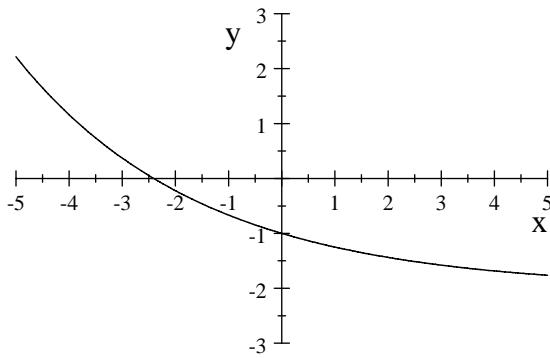
MATH. 125, QUIZ 1 - Section 3.1 and first part of 3.2 (25points = 5% final grade) -

NO CALCULATOR ALLOWED

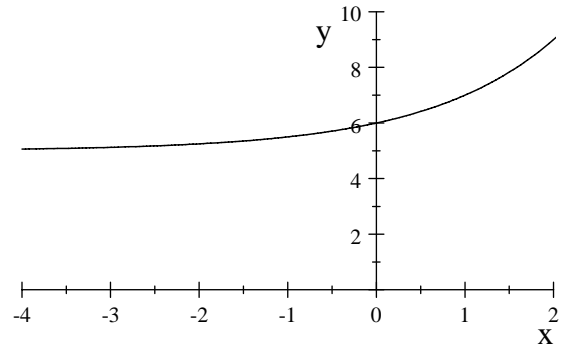
Fall 2009

1. (2 points each) Match the graphs below to one of the following functions, indicate your choice by writing a letter a, b, c, or d below the graph:

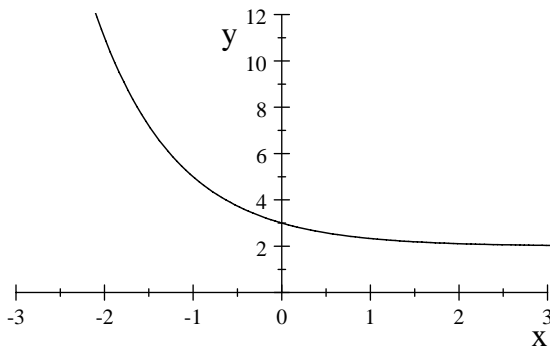
- (a) $y = 2^x + 5$
 (b) $y = 2^{x-1}$
 (c) $y = \left(\frac{1}{3}\right)^x + 2$
 (d) $y = \left(\frac{3}{4}\right)^x - 2$



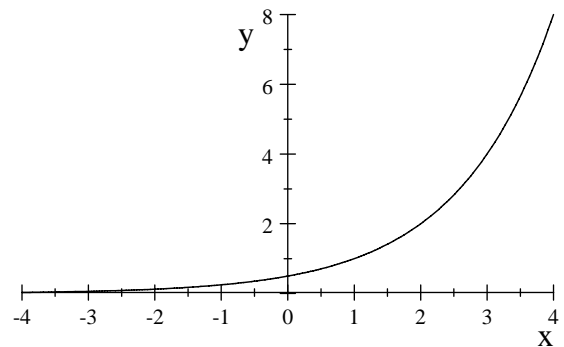
$\left(\frac{3}{4}\right)^x - 2$



$2^x + 5$



$\left(\frac{1}{3}\right)^x + 2$



2^{x-1}

2. (2 points) For $f(x) = 2\left(\frac{1}{5}\right)^{x-5} + 7$ find the exact numerical value of

$$f(3) = 57$$

3. (2 points each) Find the exact numerical value of

(a)

$$\log_{25} 5 = 0.5$$

(b)

$$\log_8 4 = \frac{2}{3}$$

go to the next page

4. (3 points) A population of bacteria is increasing in size by 50% every 12 hours. Initially the population consists of 5,000 bacteria. After two full days (counting from the beginning of the experiment) the population will consist of the following number of bacteria (circle the correct answer)

(a) $5,000 + (1.05)^2$

(b) $5,000 \times (1.05)^{12}$

(c) $5,000 \times (1.05)^4$

(d) $5,000 \times (1.5)^2$

(e) $5,000 \times (1.5)^{12}$

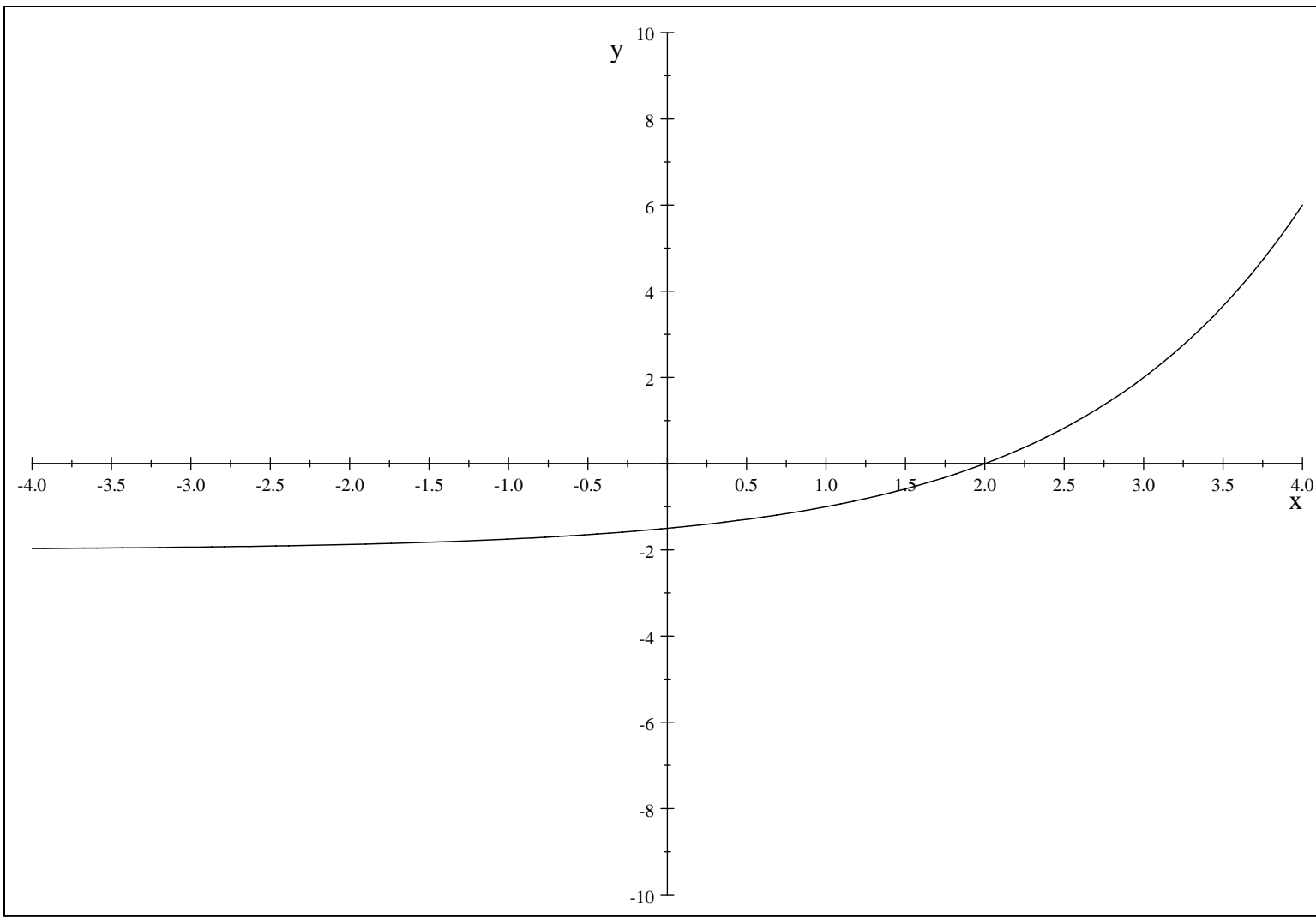
(f) $5,000 \times (1.5)^4$

(g) $5,000 \times (1.05)^2$

(h) none of the above.

5. (10 points) Graph the following function indicating clearly the x-intercept and the y-intercept (if any)

$$f(x) = 2^{x-1} - 2$$



x-intercept: 2; y-intercept: -1.5