

NAME:

MATH 103 Gateway Exam Practice 2

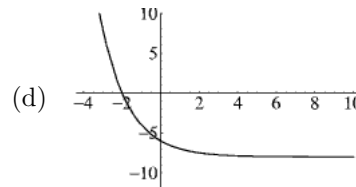
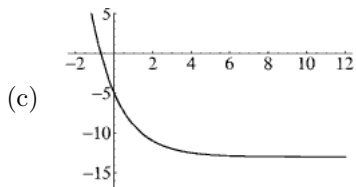
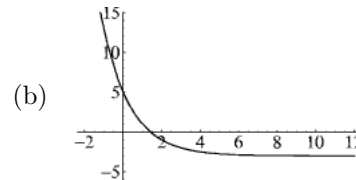
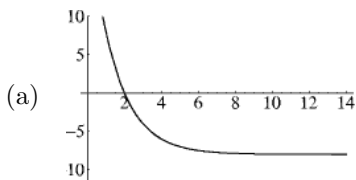
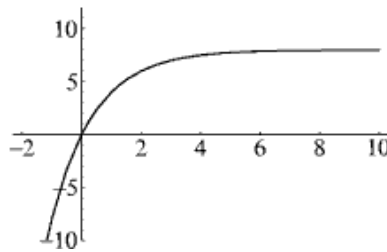
29 October 2008

100 points

**Instructions:**

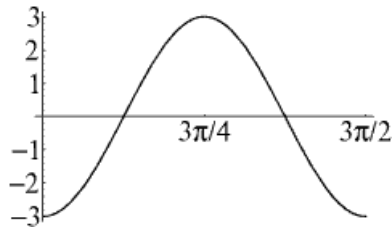
1. This exam has 4 pages (including this one), which contain 10 questions. Please check that you have all of the pages.
2. When an answer box is given, write your answer in the box. Nothing outside the answer box will be graded.
3. Do your work on scratch paper, not on this exam.
4. You may not use a book, notes, a calculator, or anything except a writing instrument, an eraser, and scratch paper for this exam.
5. There will be no partial credit given. You must get 8 out of 10 questions completely correct in order to pass this exam. A passing score on this exam will give you 100 points toward your grade for this course.
6. You have 50 minutes to complete this exam.

**Question 1.** Given the graph of  $y = f(x)$  below, select the graph of  $y = -f(x) + 5$ .



(e) None of the others

**Question 2.** Give a formula for the following graph.



ANSWER

**Question 3.** Find the equation of the line joining  $(0, -2)$  and  $(-2, 5)$ .

ANSWER

**Question 4.** What is  $\tan(-7\pi/6)$ ?

- (a) None of these
- (b)  $\sqrt{3}/3$
- (c)  $-\sqrt{3}/3$
- (d)  $\sqrt{3}$
- (e)  $-\sqrt{3}$

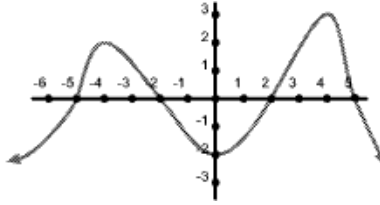
**Question 5.** Solve the equation  $80 = \frac{5}{2^x}$  for  $x$ .

ANSWER

**Question 6.** Solve the equation  $F_2 = \alpha Y_1 - (1 - \alpha)F_1$  for  $Y_1$ .

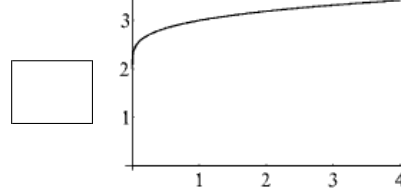
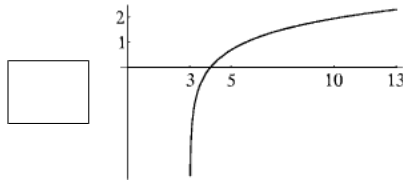
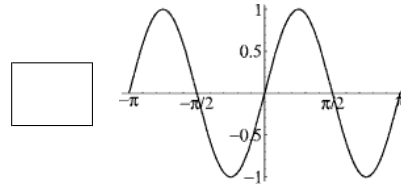
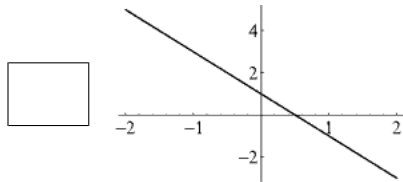
- (a)  $\frac{F_2 - \alpha}{1 - \alpha}$
- (b)  $\frac{F_2 + (1 - \alpha)F_1}{\alpha}$
- (c)  $F_2 + (1 - \alpha)F_1 - \alpha$
- (d)  $\frac{F_2 - (1 + \alpha)F_1}{\alpha}$
- (e) None of the others

**Question 7.** Given the graph of  $y = f(x)$  below, what is the range of the function?



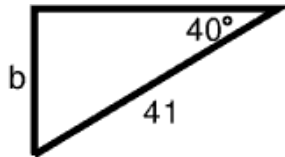
- (a)  $[-2, 3]$
- (b)  $(-\infty, 3)$
- (c)  $(-2, 3)$
- (d)  $(-\infty, \infty)$
- (e)  $(-\infty, 3]$

**Question 8.** Match the following graphs with their formulas.



1.  $\sin(2x)$
2.  $\ln(x - 3)$
3.  $x^{1/4} + 2$
4.  $-2x + 1$

**Question 9.** Which one of the following is true?



- (a)  $b = 41 \cos 40^\circ$
- (b)  $b = 41 \sec 50^\circ$
- (c)  $b = \frac{41}{\cos 50^\circ}$
- (d)  $b = 41 \sin 40^\circ$
- (e)  $b = \frac{41}{\sin 40^\circ}$

**Question 10.** Select all intervals for which  $5x^2 - 6x - 8 \geq 0$  is true.

- $[2, \infty)$
- $(-\infty, 2]$
- $[-4/5, \infty)$
- $[-4/5, 2]$
- $(-\infty, -4/5]$