

# MATH 76

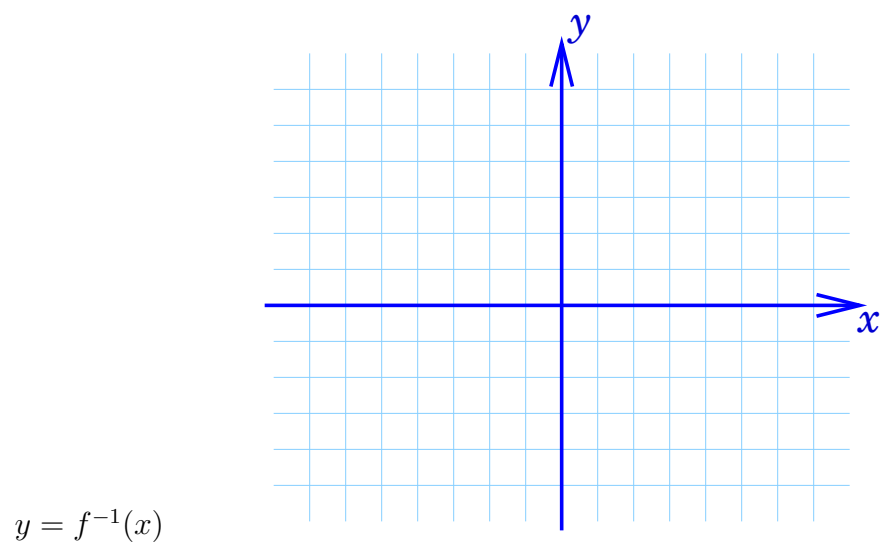
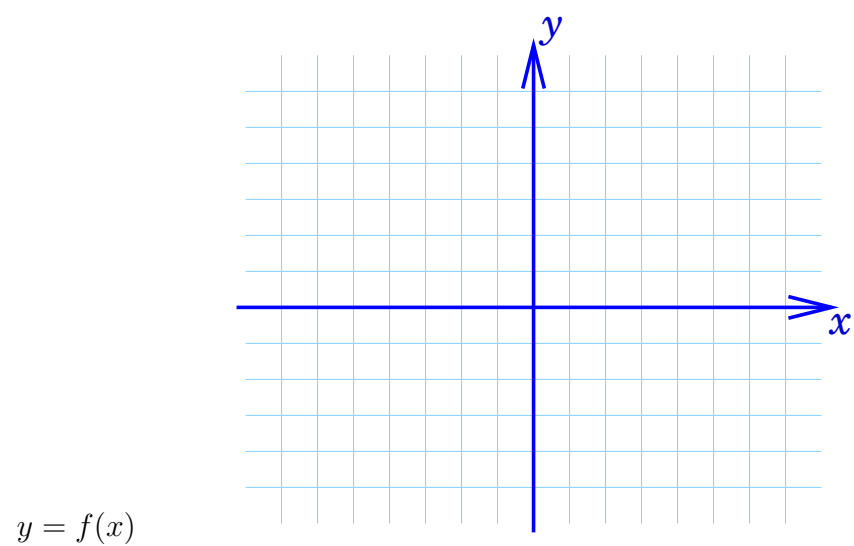
## Test 1

September 27, 2004

Name: \_\_\_\_\_

- No books, notes, or calculators are allowed.
- Please show all your work.
- Please simplify your answers.

1. Find the inverse function of  $f(x) = e^{-x} - 3$ . Sketch the graphs of  $f(x)$  and its inverse.



2. Find the exact value of each expression.

(a)  $e^{\ln 2 + \ln 3} =$

(b)  $\arcsin\left(\frac{1}{2}\right) =$

3. Evaluate the limit.

$$\lim_{x \rightarrow 0} \frac{e^x - 1}{\sin(2x)} =$$

4. Evaluate the integral.

$$\int x e^x dx =$$

5. Evaluate the integral.

$$\int_0^{\frac{\pi}{2}} \sin^2(x) \cos^3(x) dx =$$

6. Evaluate the integral.

$$\int \sqrt{4 - x^2} dx =$$

7. Evaluate the integral.

$$\int \frac{2x^2 + 3x + 13}{x^2 + x - 2} dx =$$

Please do not write anything on this page

Problem	Value	Your score
1	9	
2	6	
3	5	
4	6	
5	8	
6	8	
7	8	
Total	50	

	Your scores so far	Out of
Homework		50
Quizzes		15
Mathematica		10
Test 1		50
Total		125
Grade		