

MATH 76

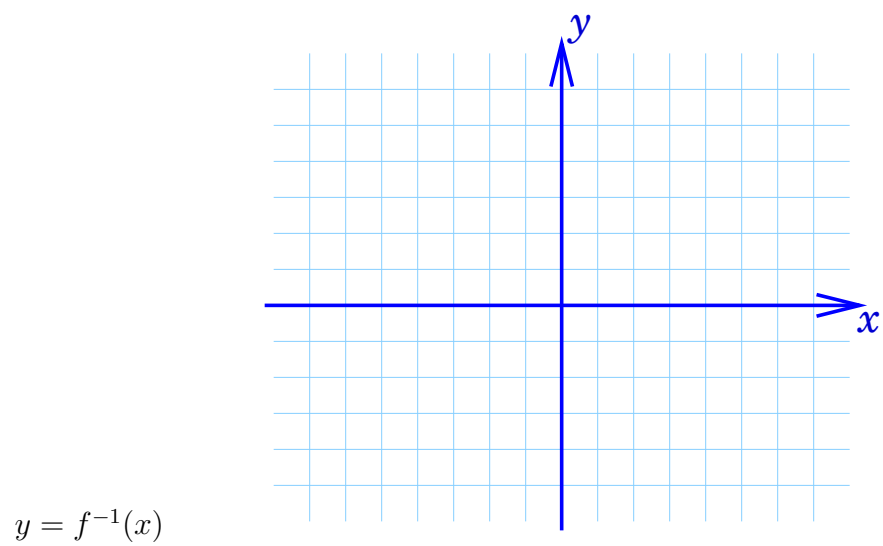
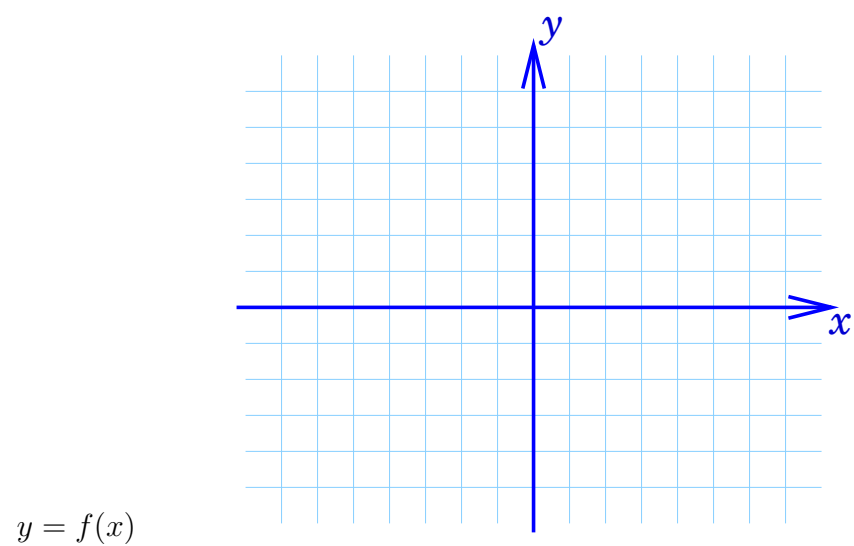
Test 1

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 | | |