

MATH 152  
Mrs. Bonny Tighe

**QUIZ 1**  
7.1-7.3  
25 points

NAME \_\_\_\_\_  
Wednesday 2/8/06 Section \_\_\_\_\_

1. Find  $(f^{-1})'(a)$  for  $f(x) = \frac{x+1}{5-x}$  at  $a = 1$ .

2. Find the limit.

a)  $\lim_{x \rightarrow \infty} (-e^{-x} + 1) =$  \_\_\_\_\_ b)  $\lim_{x \rightarrow \infty} \frac{2e^x - e^{-x}}{e^x + e^{-x}} =$  \_\_\_\_\_  $\lim_{x \rightarrow \infty} (1.000001)^x =$  \_\_\_\_\_

3. Find  $dy/dx$  if  $e^{xy} = x + \cos y$

4. Find a formula for the inverse of the function  $f(x) = \frac{2-3^x}{1+3^x}$

5. Find the derivative: a)  $y = 2e^{x^3}(x\sqrt{x})$

b)  $g(x) = \frac{e^{\cos x}}{1 - 2e^{2x}}$

6. Evaluate the integral:

a)  $\int_1^4 \frac{e^{\sqrt{x}}}{\sqrt{x}} dx$

b)  $\int e^{3x} \sin(e^{3x}) dx$

c)  $\int \frac{e^{\sin x}}{\sec x} dx$

7. Solve for x:

a)  $2e^{x+1} = 6$

b)  $e^{2x} - e^x = 2$

c)  $\ln x - \ln(x+2) = 3$