

Math 125 G - Winter 2008
Mid-Term Exam Number One
January 31, 2008
Answers

1. (a) $-\frac{1}{2}x^2 + \frac{1}{4}x^4 + C$
(b) $3 \ln |x| - \frac{2}{\sqrt{x}} + C$
(c) 54
(d) $\sin \ln x + C$

2. No:

$$f'(x) = 1 + \frac{1}{1+x^2} \neq 1 - \frac{1}{1+x^2} = g(x).$$

3. $f'(x) = \frac{2x}{\ln x^2} - \frac{\cos x}{\ln \sin x}.$

4. $\frac{3}{2}$

5. $\frac{4}{3}\sqrt{8} - \frac{2}{5}\sqrt{32}$

6. (a) $\frac{8}{15}\pi$

(b) $\frac{1}{2}\pi$

(c) $a = -\frac{1}{40}.$