

## EMCF03 – Math 1432, 13209

The answer sheet for this assignment can be found by logging into *CourseWare* at <http://www.casa.uh.edu>, selecting **Math 1432(13209)**, clicking on the **EMCF** tab at the top of the page, and selecting **EMCF03**.

1.  $e^{\ln(2x)} =$ 
  - a.  $e^{\ln(2x)} \frac{1}{x}$
  - b.  $2x$
  - c.  $e^{\ln(2x)} \frac{2}{x}$
  - d.  $e^{\ln(2x)} \frac{1}{x \ln(2)}$
  - e. None of these.
2. Give the slope of the tangent line to the graph of  $f(x) = x e^{3(x-1)}$  at  $x = 1$ .
  - a. 4
  - b. 3
  - c. 2
  - d. 1
  - e. None of these.
3. Give the y-intercept of the tangent line to the graph of  $f(x) = x e^{3(x-1)}$  at  $x = 1$ .
  - a. -2
  - b. -1
  - c. 0
  - d. -3
  - e. None of these.
4.  $\int \frac{e^{\sqrt{x}}}{\sqrt{x}} dx =$ 
  - a.  $\frac{2}{3} e^{\sqrt{x}} + C$
  - b.  $\frac{1}{2} e^{\sqrt{x}} + C$
  - c.  $e^{\sqrt{x}} + C$
  - d.  $2e^{\sqrt{x}} + C$
  - e. None of these.

5. The function  $f(x) = x \log_{10}(x)$  is invertible on the interval  $[1/2, 3]$ . Give the slope of the tangent line to the graph of  $f^{-1}(x)$  at  $x = 0$ .
- 10
  - $\ln(10)$
  - $1/\ln(10)$
  - $x = 0$  is not in the domain of  $f^{-1}(x)$
  - None of these.
6.  $\ln(e^{3x}) =$
- $\frac{\ln(3)}{e^{3x}}$
  - $1/3$
  - $\frac{3}{e^{3x}}$
  - $3x$
  - None of these.
7. Give the slope of the tangent line to the graph of  $f(x) = (2x - 1)e^{3x+2}$  at  $x = 0$ .
- $-e^2$
  - $e^2$
  - $-3e^2$
  - $3e^2$
  - None of these.
8.  $\int_0^1 x e^{x^2} dx =$
- $\frac{1}{2}e$
  - $\frac{1}{2}e - 1$
  - $\frac{1}{2}e - \frac{1}{2}$
  - $e - 1$
  - None of these.
9. The function  $f(x) = x + e^x + 4$  is invertible. Give  $(f^{-1})'(5)$ .
- $-1/2$
  - $-5/2$
  - $1/2$
  - $5/2$
  - 2
  - None of these.

10. The function  $f(x) = x + e^x + 4$  is invertible. Give the  $y$ -intercept for the tangent line to the graph of  $f^{-1}(x)$  at  $x = 5$ .

- a.  $5/2$
- b.  $2$
- c.  $3$
- d.  $7/4$
- e.  $9/4$
- f. None of these.