

MULTIPLE CHOICE: Non-Calculator

1. Suppose $g(x) = 2 \sin x - 3 \cos x$. Then $g'(x) = ?$

- A. $2 \sin x + 3 \cos x$
- B. $2 \cos x - 3 \sin x$
- C. $2 \cos x + 3 \sin x$
- D. $-2 \cos x + 3 \sin x$
- E. $-2 \cos x - 3 \sin x$

2. Let $f(x) = 2 \sin x$. Then $\frac{d}{dx}(f'(x)) =$

- A. $2 \cos x$
- B. $2 \sin x$
- C. $-2 \cos x$
- D. $-2 \sin x$
- E. None of the above

3. Suppose $v(t) = 3t^3 \cos t$. Then $v'(t) =$

- A. $-9t^2 \sin t$
- B. $9t^2 \sin t$
- C. $9t^2 \cos t - 3t^3 \sin t$
- D. $9t^2 \cos t + 3t^3 \sin t$
- E. $9t^2 \cos t + 9t^2 \sin t$

4. $\frac{d}{dx} \left(\frac{3x^3}{\tan x} \right) =$

- A. $\frac{3x^2(3 \tan x + x \sec^2 x)}{\tan^2 x}$
- B. $\frac{9x^2}{\sec^2 x}$
- C. $\frac{3x^2(3 \tan x + x \sec^2 x)}{\sec^2 x}$
- D. $\frac{3x^2(3 \tan x - x \sec^2 x)}{\sec^2 x}$
- E. $\frac{3x^2(3 \tan x - x \sec^2 x)}{\tan^2 x}$