QUESTION 1

(1 pts)

Suppose you have a function, f(x), that represents some curve, and a point (a, b) on the curve. How do you find the slope of the tangent line at that point?

- A. Plug in the given point, and write in y = mx + b form.
- B. Find the derivative of f(x).
- C. Re-write the function in point-slope form.
- D. Find the derivative of f(x), and then determine the value of the derivative at that point.

QUESTION 2

(1 pts)

If c is a constant and f is a differentiable function, then  $\frac{d}{dx}[cf(x)]$  is equivalent to:

- A.  $c\frac{d}{dx}f(x)$
- B.  $\frac{d}{dx}cf(x)$
- C.  $\frac{d}{dx}f(x)c$
- D. f(x)

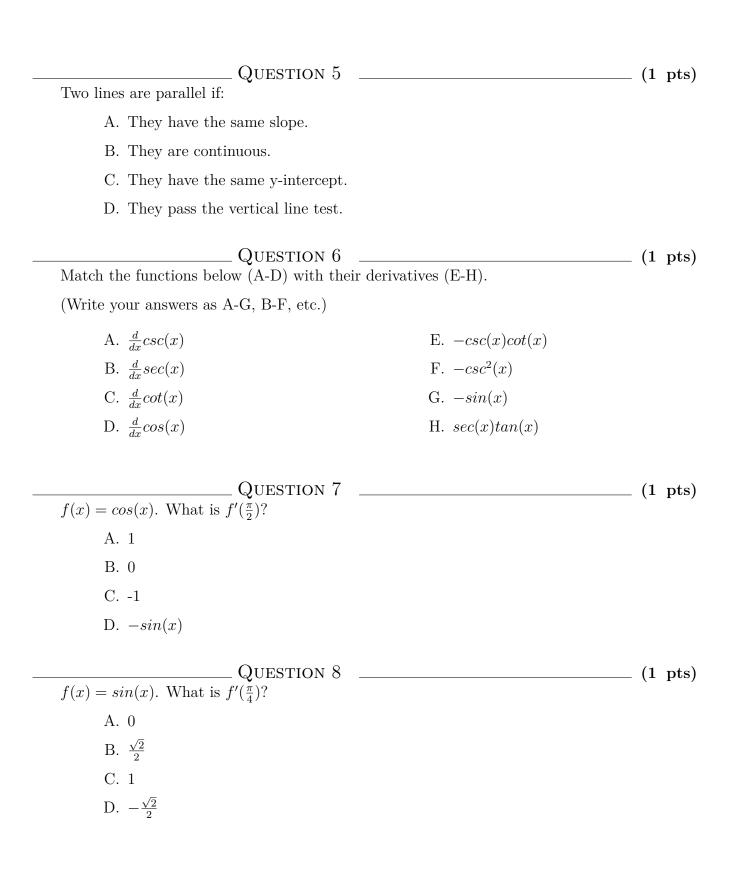
GUESTION 3 (1 pts) If f and g are both differentiable functions, then  $\frac{d}{dx}[f(x)g(x)]$  is equivalent to:

- A.  $\frac{d}{dx}f(x)\frac{d}{dx}g(x)$
- B.  $\frac{d}{dx}[f(x) + g(x)]$
- C.  $f(x)\left[\frac{d}{dx}g(x)\right] + g(x)\left[\frac{d}{dx}f(x)\right]$
- D.  $\frac{d}{dx}f(x) + \frac{d}{dx}g(x)$

(1 pts)

If f and g are both differentiable functions, then  $\frac{d}{dx}\left[\frac{f(x)}{g(x)}\right]$  is equivalent to:

- A.  $\frac{\frac{d}{dx}f(x)}{\frac{d}{dx}g(x)}$
- B.  $\frac{g(x)\frac{d}{dx}[f(x)]-f(x)\frac{d}{dx}[g(x)]}{[g(x)^2]}$
- C.  $\frac{\frac{d}{dx}f(x) \frac{d}{dx}g(x)}{f(x)g(x)}$
- D.  $\frac{d}{dx}f(x) \frac{d}{dx}g(x)$



Given a function $f(x)$ , when would we have a horizontal tangent line?	(1 pts)
A. When $f'(x) = 0$ .	
B. When the function is continuous.	
C. When $x = 0$ .	

D. When f(x) = 0. Calculate  $\lim_{x\to 0} \frac{\sin^2(x)}{x}$  QUESTION 10  $\_$  (1 pts)

- A. 1
- B. sin(x)
- C. -1
- D. 0