Name _____ AB Quiz . Calc

QUIZ #1

(10)

1. $\frac{d}{dx}\int_0^x \cos(2\pi u)\,du$ is

(A) 0 (B) $\frac{1}{2\pi}\sin x$ (C) $\frac{1}{2\pi}\cos(2\pi x)$ (D) $\cos(2\pi x)$ (E) $2\pi\cos(2\pi x)$

2. $\frac{d}{dx}(2^x) =$

(A) 2^{x-1} (B) $(2^{x-1})\,x$ (C) $\frac{2x}{\ln 2}$ (D) $(2^x)\ln 2$ (E) $(2^{x-1})\ln 2$

3. A particle moves along a line so that at time t, where $0 \le t \le \pi$, its position is given by $s(t) = -4\cos t - \frac{t^2}{2} + 10$. What is the velocity of the particle when its acceleration is zero?

(A) 1.32 (B) 8.13 (C) 2.55 (D) 0.74 (E) -5.19

4. If $x^3 + 3xy + 2y^3 = 17$, then in terms of x and y, $\frac{dy}{dx} =$

(A) $-\frac{x^2+y}{x+2y^2}$ (D) $-\frac{x^2+y}{x+y^2}$

(B) $-\frac{x^2+y}{2y^2}$ (E) $-\frac{x^2+y}{x+2y}$

(C) $\frac{-x^2}{1+2y^2}$

5. If $f(x) = (x-1)^2\sin x$, then $f'(0) =$

(A) 2 (B) 1 (C) 0 (D) -1 (E) -2