Name _____ AB Quiz C

1) The slope of $y = |x|$ at the point where $x = \frac{1}{2}$ is

(A) -1 (B) 0 (C) $\frac{1}{2}$ (D) 1 (E) nonexistent

2) If $y = \sin^3(1 - 2x)$, then $\frac{dy}{dx}$ is

(A) $3\sin^2(1 - 2x)$ (B) $-2\cos^3(1 - 2x)$ (C) $-6\sin^2(1 - 2x)$

(D) $-6\sin^2(1 - 2x)\cos(1 - 2x)$ (E) $-6\cos^2(1 - 2x)$

3) The area bounded by the curves $y = f(x)$ and $y = g(x)$ in the figure equals which of the following?

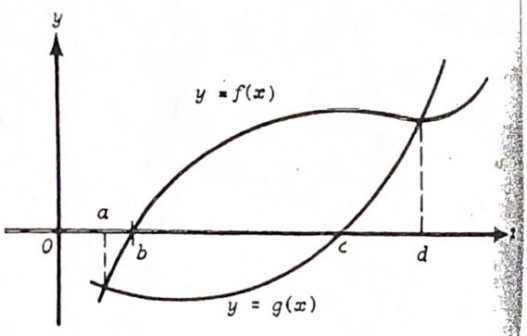
(A) $\int_a^d [f(x) + g(x)]\,dx$

(B) $\int_a^d [f(x) - g(x)]\,dx$

(C) $\int_a^d [g(x) - f(x)]\,dx$

(D) $\int_a^b [g(x) - f(x)]\,dx + \int_b^d [f(x) - g(x)]\,dx$

(E) none of the preceding



4) If c represents the number defined by Rolle's theorem, then, for the function $f(x) = x^3 - 3x^2$ on the interval $0 \leqq x \leqq 3$, c is equal to

(A) 2 (B) 1 (C) 0 (D) $\sqrt{2}$ (E) none of these

5) $\int \frac{x\,dx}{\sqrt{9 - x^2}}$ equals

(A) $-\frac{1}{2}\ln\sqrt{9 - x^2} + C$ (B) $\sin^{-1}\frac{x}{3} + C$ (C) $-\sqrt{9 - x^2} + C$

(D) $-\frac{1}{4}\sqrt{9 - x^2} + C$ (E) $2\sqrt{9 - x^2} + C$