

AP Calculus Exam Prep Assignment #6 KEY

1) $f(x)$ is continuous on $[a, b]$. If this interval is partitioned into n equal subintervals of

length Δx , and if x_k is a number in the k^{th} subinterval, then $\lim_{n \rightarrow \infty} \sum_{k=1}^n f(x_k) \Delta x =$

C) $\int_a^b f(x) dx$

2) If $F'(x) = G'(x)$ for all x , then:

A) $\int_a^b F'(x) dx = \int_a^b G'(x) dx$

3) If $f(x)$ is continuous on $[a, b]$ then there exists at least one number c where $a < c < b$ such that $\int_a^b f(x) dx =$

C) $f(c)(b - a)$ The Mean Value Theorem is used here.

4) If $f(x)$ is continuous on $[a, b]$ and k is a constant, then $\int_a^b kf(x) dx =$

D) $k \int_a^b f(x) dx$

5) $\frac{d}{dt} \int_0^t \sqrt{x^3 + 1} dx =$

A) $\sqrt{t^3 + 1}$

6) If $F(x) = \int_1^{2x} \frac{1}{1-t^3} dt$, then $F'(x) =$

E) $\frac{2}{1-8x^3}$