

*This quiz is worth 10 points and you have 10 minutes to complete it. Show all work and circle your final answers.*

**Calculators are NOT allowed today.**

**1. (2 pts) T F** The following is equivalent to the Fundamental Theorem of Calculus:  
If  $h'(x) = g(x)$  then  $\int_a^b h(x) dx = g(b) - g(a)$ .

**2. (8 pts) Matching!** Choose one capital letter to write in each blank.

(a) \_\_\_\_\_  $\int \left( \frac{3}{x^2} - 4 \right) dx$

(A)  $x + C$

(B)  $-\frac{3}{x} - 4x + C$

(b) \_\_\_\_\_  $\int \sin^2(3x) + \cos^2(3x) dx$

(C)  $\frac{1}{3}(x^3 + 4)^3 \left( \frac{1}{4}x^4 \right) + C$

(c) \_\_\_\_\_  $\int (x^3 + 4)^2 dx$

(D)  $2(x^3 + 4)(3x^2) + C$

(E)  $\frac{1}{7}x^7 + 2x^4 + 16x + C$

(d) \_\_\_\_\_  $\int (x^2 \cos x + 2x \sin x) dx$

(F)  $3 \ln |x^2| - 4x + C$

(G)  $\frac{3}{2x} \ln |x^2| - 4x + C$

(H)  $x^2 \sin x + C$

(I)  $\frac{1}{3} \sin^3(3x) + \frac{1}{3} \cos^3(3x) + C$

(J)  $\frac{1}{3}x^3 \sin x - x^2 \cos x + C$