

Math 131 - Quiz 11

April 26, 2023

Name key

Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (6 points) Evaluate each indefinite integral.

(a) $\int (x^2 + x + 1) dx$

$$\frac{1}{3}x^3 + \frac{1}{2}x^2 + x + C$$

(b) $\int (3 \sin x - 5 \cos x) dx$

$$-3 \cos x - 5 \sin x + C$$

(c) $\int \left(\frac{3}{x} - e^x \right) dx$

$$3 \ln |x| - e^x + C$$

2. (4 points) Let $f(x) = \sin(x)$. Use 4 subintervals of equal length and right endpoints to compute the corresponding right Riemann sum for f over the interval $[1, 2]$.

$$\Delta x = \frac{2-1}{4} = \frac{1}{4} = 0.25$$

RIEMANN SUM =

$$1 < 1.25 < 1.5 < 1.75 < 2$$

↑ ↑ ↑ ↑
 c_1 c_2 c_3 c_4

$$\sin(1.25)(0.25) + \sin(1.5)(0.25)$$

$$+ \sin(1.75)(0.25) + \sin(2)(0.25)$$

$$= (0.25) \cdot (3.83976298)$$

$$\approx 0.95994$$