

(15pts) NAME (printed neatly): Key

(10pts) Section Number (circle correct section): 504 (12:40pm) 505 (9:10am) 506 (11:30am)

Quiz Grade: _____

Directions for taking quizzes: You may not share calculators. Follow the Aggie Honor Code! Give calculator commands where appropriate.

1. (25 pts) Express $\lim_{n \rightarrow \infty} \sum_{i=1}^n [4(x_i^*)^5 - 2\sqrt{x_i^*} + 8^{x_i^*}] \Delta x$ as an integral on the interval $[1, 25]$. Do not evaluate.

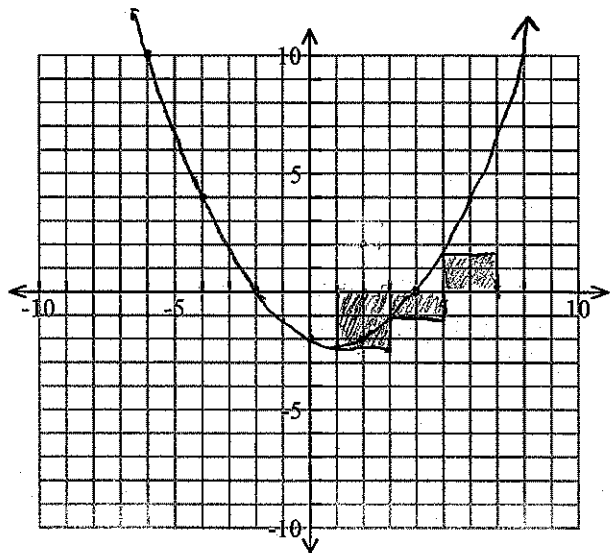
$$\int_1^{25} (4x^5 - 2\sqrt{x} + 8^x) dx$$

2. (25 pts) What is the most general antiderivative F of $f(x) = \sec^2 x - \frac{7}{x} + 2^x - \sqrt{x}$?

$$F = \tan x - 7 \ln|x| + \frac{2^x}{\ln 2} - \frac{2}{3} x^{\frac{3}{2}} + C$$

3. (25 pts) Let A be the region that lies under the graph (between f and the x -axis) of $f(x) = \frac{1}{4}x^2 - \frac{1}{2}x - 2$ between $x = 1$ and $x = 7$.

a. (8pts) Graph f . Draw the appropriate rectangles corresponding to L_3 for the region A .



b. (8pts) Exactly calculate L_3 .

$$\begin{aligned} L_3 &= 2 [f(1) + f(3) + f(5)] \\ &= 2 [-2.25 + -1.25 + 1.75] \\ &= -3.5 \end{aligned}$$

c. (5 pts) Represent the region A as a definite integral. Do not evaluate.

$$\int_1^7 \left(\frac{1}{4}x^2 - \frac{1}{2}x - 2 \right) dx$$

d. (4 pts) Does the definite integral from part c represent the (circle one)

- area of A
- the net area of A
- the negative of the area of A ?

NAME: _____

MATH 131 SECTION (Circle one):

504 505 506

Circle First Letter of Last Name:

A-D E-K L-R S-Z