Name: _____

Section: _____

Math 10560, Quiz 5

- The Honor Code is in effect for this quiz. All work is to be your own.
- Please turn off all cellphones and electronic devices.
- Calculators are NOT allowed
- The quiz lasts for 10 min.

PLEASE MARK YOUR ANSWERS WITH AN X, not a circle!

1.	(a)	(b)	(c)	(d)	(e)
2.	(a)	(b)	(c)	(d)	(e)

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Multiple Choice

1.(2 pts.) Consider the integral

$$\int_2^6 (x-3)^2 \, dx$$

Estimate this integral using Trapezoidal Rule with $n = 4$.

(a) 10 (b) 20 (c) 8

(d) 12 (e) 5

Let $f(x) = (x-3)^2$. For $n = 4$ we have $\Delta x = 1$ and so:

$T_4 = \frac{1}{2}(f(2) + 2f(3) + 2f(4) + 2f(5) + f(6))$

$= \frac{1}{2}(1 + 2 \cdot 0 + 2 + 2 \cdot 4 + 9) = 10$

2.(2 pts.) Compute:

$$\int_1^3 \frac{5}{(x+2)(2x+1)} dx$$

(a) $\frac{5}{3}\ln(\frac{7}{5})$ (b) $-5\ln(7)$

(c) $\ln(5) - 4\ln(7)$ (d) $-\ln(\frac{7}{5})$

(e) $2\ln(7) - \ln(5)$

Write $\frac{5}{(x+2)(2x+1)} = \frac{A}{(x+2)} + \frac{B}{(2x+1)}$

We get that $A = -\frac{5}{3}$ and $B = \frac{10}{3}$

$$\int_1^3 \frac{5}{3(x+2)} + \frac{10}{3}\frac{1}{(2x+1)} = [-\frac{5}{3}\ln(x+2) + \frac{5}{3}\ln(2x+1)]_1^3 = \frac{5}{3}\ln(\frac{2x+1}{x+2})]_1^3 = \frac{5}{3}[\ln(7/5) - \ln(1)] = \frac{5}{3}\ln(7/5)$$