

Name _____

You have 20 minutes for this quiz – no calculators allowed.

1. (2 points) Evaluate the following indefinite integral.

$$\int \frac{6}{x^4} dx$$

2. (2 points) Evaluate and simplify the following definite integral.

$$\int_2^{18} \frac{20x + 1}{2x} dx$$

3. (2 points) Evaluate the following indefinite integral.

$$\int \frac{4 \cos x - 4 \cos^3 x}{\sin^2 x} dx$$

4. (2 points) Rounded off to one place after the decimal, $\int_{30}^{35} (\cos^4(3x + 8) + 4) dx$ is equal to one of the choices below. Circle the correct choice and show enough work to justify your answer. Hint: Obtain an approximation without finding an antiderivative or a limit.

(a) 3.4

(b) 9.3

(c) 13.7

(d) 18.9

(e) 21.8

(f) 26.5

(g) 32.1

(h) 35.0

(i) 41.6

(j) 47.2

5. (2 points) Evaluate the following limit. Be sure to use proper notation throughout your evaluation of this limit.

$$\lim_{n \rightarrow \infty} \sum_{k=1}^n \left(\frac{5}{n} + \frac{8k}{n^2} + \frac{100}{n^3} \right)$$