

Calculus I

Name: _____

Study Guide 28

Class: _____

Due Date: _____

Score: _____

No Work \Leftrightarrow No Points

Use Pencil Only \Leftrightarrow Be Neat & Organized

1. (3 points) Find $\int_1^6 \sqrt{3x-2} \, dx$

1. _____

2. (4 points) Find $\int_0^1 x^3(5-x^4)^4 \, dx$

2. _____

3. (4 points) Find $\frac{d}{dx} \int_0^{x^2} \frac{1}{2}|t| \, dt$

3. _____

4. (5 points) Find the length of the graph of $f(x) = 2x + 3$ for $1 \leq x \leq 4$.

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5. (6 points) Find the length of the graph of $f(x) = x^3 + \frac{1}{12x}$ for $1 \leq x \leq 3$.

5. _____

6. (6 points) Find $f(0)$, $f'(0)$ and $f''(0)$ for $f(x) = \int_0^{x^2} \frac{1}{1 + \sin \sqrt{t}} dt$.

6. _____

7. (6 points) Find the length of the graph of $f(x) = x^4 + \frac{1}{32x^2}$ for $1 \leq x \leq 2$.

7. _____

8. Find the volume of the solid obtained when revolving the enclosed region between the graphs of equations given below by the y -axis. Drawing Required.
- (a) (5 points) $f(x) = x - 2$, $y = 0$, $x = 4$

(a) _____

(b) (5 points) $f(x) = \sqrt{x}$, $x = 1$, $x = 9$, $y = 0$

(c) (6 points) $f(x) = (x + 3)^2 + 2$, $g(x) = 1$, $x = -2$, $x = -4$ (b) _____

(c) _____