

Calculus II

Name: _____

Study Guide 20

Class: _____

Due Date: _____

Score: _____

No Work \Leftrightarrow No Points

Use Pencil Only \Leftrightarrow Be Neat & Organized

-
1. (6 points) Find the exact length of the curve $y = 1 + 6x^{3/2}$ for $0 \leq x \leq 1$.

1. _____

2. (4 points) Find the exact length of the curve $y = \sqrt{3}x$ for $1 \leq x \leq 4$.

2. _____

3. (6 points) Find the exact length of the curve $y = \ln(\cos x)$ for $0 \leq x \leq \pi/3$.

3. _____

4. (7 points) Find the exact length of the curve $x = \frac{y^4}{8} + \frac{1}{4y^2}$ for $1 \leq y \leq 2$.

4. _____

5. (6 points) Find the arc length function of the curve $y = \int_1^x \sqrt{\sqrt{t} - 1} dt$ starting at $x = 1$.

5. _____

6. (7 points) Find the exact area of the surface obtained by rotating the curve $y = x^3$ about the x -axis for $0 \leq x \leq 1$. Drawing required.

6. _____

7. (7 points) Find the exact area of the surface obtained by rotating the curve $y = 1 - x^2$ about the y -axis for $1 \leq x \leq 3$. Drawing required.

7. _____

8. (7 points) Find the exact area of the surface obtained by rotating the curve $x = \sqrt{r^2 - y^2}$ about the y -axis for $-r/2 \leq y \leq r/2$. Drawing required.

8. _____