Calculus II	Name:
Study Guide 23	Class:
Due Date:	Score:

No Work \Leftrightarrow No Points

Use Pencil Only \Leftrightarrow Be Neat & Organized

1. (3 points) Given the curve $x = 4 \sin t$, $y = 4 \cos t$ for $0 \le t \le \pi$, find its initial and terminal points.

2. (4 points) Given the curve
$$x = \sec t, y = \tan t$$
, find its $\frac{dy}{dx}$ and $\frac{d^2y}{dx^2}$.

3. (4 points) Find the equation of the tangent line to the curve $x = \sqrt{t}$, y = 2t - 4 at t = 4.

3. ____

2.____

4. (4 points) Consider the curve given by $x = \cos 2t, y = 2\cos t$, eliminate the parameter then graph the curve.

4. _____

5. (4 points) Consider the curve given by $x = \sec t, y = 1 + \tan t$ for $-\pi/4 \le t \le \pi/4$ eliminate the parameter then graph the curve.

5. _

6. (5 points) Eliminate the parameter t, then precisely describe the curve given by $x = h + r \cos t$, $y = k + r \sin t$.

7. (4 points) Find the arc length of the curve x = 4t + 3, y = 3t - 2 for $0 \le t \le 2$.

8. (6 points) Find the arc length of the curve $x = \cos^3 t$, $y = \sin^3 t$ for $0 \le t \le \pi/2$.

8. _____

7. _____

9. (4 points) Find the slope of the tangent line to the curve $x = t^2$, $y = t^3$ at the point where t = 0.

9. _____

10. (6 points) Find the area of the surface generated by revolving the curve $x = t^2$, $y = t^3$ for $0 \le t \le 2$ about x-axis.

10. _____

11. (6 points) Find the area of the surface generated by revolving the curve $x = t, y = 2t^2$ for $0 \le t \le 1$ about y-axis.

11. _____