ACMAT161 Summer 2024
Professor Manguba-Glover
Homework 14 Name: _____

Show all work, simplify, and box your answers. If you do the problem incorrectly, or don't show sufficient work, you will be asked to rewrite the problem for full credit.

Due next class. This assignment is extra credit.

1. Find $\frac{dy}{dx}$ for $r = 1 - \sin\theta$.
2. Find $\frac{dy}{dx}$ $r = 8\sin\theta$
3. Find $\frac{dy}{dx}$ for $r = 2\sin 3\theta$
4. Find $\frac{dy}{dx}$ for $x = 2 + 4t$, $y = 4 - 8t$
5. Find $\frac{dy}{dx}$ for $x = 3\sin t$, $y = 3\cos t$
6. Find the equation of the line tangent to the curve $x = t^2 - 1$, $y = t^3 + t$ at $t = 2$
7. Find the equation of the line tangent to the curve $x = \cos t + t\sin t$, $y = \sin t - t\cos t$ at $t = \frac{\pi}{4}$