ACMAT161 Summer 2024
Professor Manguba-Glover
Homework 12 Name: _____

Show all work and 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. Students who turn assignments in late (or do not attempt a problem) forfeit their ability to rewrite those problems for credit.

Note: You do not have to simplify your answers.

1. Find $\frac{dy}{dx}$ for $2xy + y^2 = x + y$
2. Find $\frac{dy}{dx}$ for $x^2y + xy^2 = 6$
3. Find $\frac{dy}{dx}$ for $y^2 = \dfrac{x-1}{x+1}$
4. Find $\frac{dy}{dx}$ for $x = \tan y$
5. Find an equation of the line tangent to $y^2 - xy = 3x^3y^4 + x^2 + 4$ at the point $(0, 2)$
6. Find an equation of the line tangent to $y^2(2 - x) = x^3$ at $(1, 1)$
7. Find an equation of the line tangent to $6x^2 + 3xy + 2y^2 + 17y - 6 = 0$ at $(-1, 0)$
8. If $x^3 + y^3 = 16$, find $\frac{d^2y}{dx^2}$