Math 155 - Multivariable Calculus
Fall 2025
Written Homework 1

- For full credit, you must show **ALL** of your work.
- Please do your work on a separate sheet of paper.
- Submit your work on Gradescope.

In your solution for each problem, **write one sentence** to identify the integration method you chose (algebra, substitution, integration by parts) and **explain why** you chose that method (one sentence). Be sure to show all of your steps and all work for full credit. A solution that earns full credit should show steps similar to example 1.32 and example 3.2 from your textbook.

(10 points) 1. $\displaystyle\int \frac{2x^6 - \sqrt{x}}{2x}\,dx$

(10 points) 2. $\displaystyle\int_1^2 \frac{e^{1/x}}{x^2}\,dx$

(10 points) 3. $\displaystyle\int \frac{x^3}{\sqrt{1-x^2}}\,dx$

(10 points) 4. $\displaystyle\int \frac{\ln(3x)}{x^2}\,dx$

(10 points) 5. $\displaystyle\int_0^{\frac{\pi}{4}} x^2 \sin(x)\,dx$

(10 points) 6. $\displaystyle\int \frac{x}{\sqrt{x+1}}\,dx$