

Math 170: Worksheet 1

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Problem 1. Find the following definite integral:

$$\int_{-1}^1 (x^5 - 2x^3 + x) dx$$

Problem 2. Determine if the function $f(x) = x^3 - 3x^2 + 2x - 1$ is going up or down at the point $x = 1$.

Problem 3. Let $f(x) = x^2 - 2x$. What is $f'(1)$? What does it say about the behavior of $f(x)$?

Problem 4. (extra) Let $f(x) = x^3 - 3x^2 + 2x - 1$, the same function as Problem 2. Solve for all values of x for which $f'(x) = 0$.

Problem 5. (extra) Use your calculator to simplify the values of x that you got in Problem 4. Plot the function $f(x)$ in <https://www.desmos.com/calculator>. Can you find the values on this graph somewhere?