MATH 1300
Weekly-Work Prompts

All responses are to be uploaded to Canvas for their corresponding weeks. All responses are due the Sunday of the week they are assigned.

Due	Prompt
Week 13	**What is the most challenging aspect of the integration stuff we've done so far?** The solution to written homework 13, problem 3 is below. Use this solution to revise your solution to problem 3 from this week's written homework. If you've made any mistakes, be sure to point them out and explain why the mistakes you've made were mistakes. Do not stress too much about this, just give it an honest try and you will receive full credit. I do not want this to take you more than 30 minutes. This submission is due Sunday at midnight. Be sure to upload your solution to the weekly work 1 slot on Canvas, and upload your submission as a single PDF.

Written Homework 13 Problem 3

Problem 3: Use the graph to compute $\int_{-4}^{2} f(x) + 4x + 3 dx$.

Solution:

We first use the properties of the integral to write

$$\int_{-4}^{2} f(x) + 4x + 3 dx = \int_{-4}^{2} f(x) dx + 4\int_{-4}^{2} x dx + \int_{-4}^{2} 3 dx$$

The evaluation theorem gives

$$4\int_{-4}^{2} x dx = -24$$

and

$$\int_{-4}^{2} 3 dx = 18.$$

To compute $\int_{-4}^{2} f(x) dx$, we use the graph. From $x = -4$ to $x = -2$, we pick up an area of 2, from $x = -2$ to $x = 1$, we pick up an area of -12, and from $x = 1$ to $x = 2$ we pick up an area of 3. Adding these areas up we get

$$\int_{-4}^{2} f(x) dx = -7$$

.

Adding all our areas gives

$$\int_{-4}^{2} f(x) + 4x + 3 dx = -13.$$