

The solutions to the first two problems will be your first page.

1. Find $f'(1)$ if $f(x) = e^{\sqrt{3x^2+13}} + \sin(2\pi x)x^{1/3} - \frac{\ln(x^2)}{x+1}$. Show organized and logical work.
2. Simplify $\int_{-1}^1 \cos(6\pi x) - \frac{10}{x^2+1} dx$. Show work and/or appropriate reasoning.

The solution to the CAS problem will be your second page.

3. CAS problem: use a CAS device to check your answers to the first two problems (and the brief answers below to check your CAS check!) Submit a screenshot or pdf of the device's solution and your corresponding commands. If using Matlab, remember the " * " when writing, for instance, $\sin(2 * \pi * x) * x^{1/3}$ because the program needs to see the multiplication operation. Also, write $e^{\sqrt{3x^2+13}}$ as $\exp(\sqrt{3 * x^2 + 13})$. See the "Matlab in Virtual Desktop" module in the Canvas course for more guidance.

Merge the pages to form a single file with two pages and submit to Canvas. The correctly formatted submission is worth two points.

Answers:

1. $\frac{3}{4}e^4 + 2\pi - 1$
2. -5π