

Show all work and make sure to give exact answers. Good luck, and enjoy your weekend!

1. (6 points) Find the value of  $H(-1)$ ,  $H'(0)$ , and  $H(1)$ , where  $H(x) = \int_{-1}^x \frac{1}{1+u^2} du$ .

2. (7 points) Find the value of  $\int_0^1 (x^4 + 2x + e^x) dx$ .

3. (7 points) Compute  $\int \sin^2(x) \cos(x) dx$ .