

1. Plot region specified by the definite integral, then evaluate the integrals.

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

(c)  $\int_1^4 2x \cos(x) - x^2 \sin(x) dx$

(b)  $\int_{-1}^2 e^x dx$

(d)  $\int_1^3 \ln(x) dx$

2. Find the derivative of each function.

(a)  $F(x) = \int_0^x \cos(t) dt$

(b)  $G(x) = \int_1^x t \sin(2t) dt$

(c)  $H(x) = \int_1^{x^3} \ln(3 + 2t) dt$       *Hint: Think Chain Rule*