

Math 125, Winter 2016, Sections D and E, Answers to Midterm I

1. (a) $\int \frac{x+3}{\sqrt{x+2}} dx = \frac{2}{3}(x+2)^{3/2} + 2\sqrt{x+2} + C$

(b) $\int_0^1 x(5x^2+1)^2 dx = \frac{43}{6}$

(c) $\int_0^5 |x-3| dx = \frac{13}{2}$

2. (a) $g(2) = 20$.

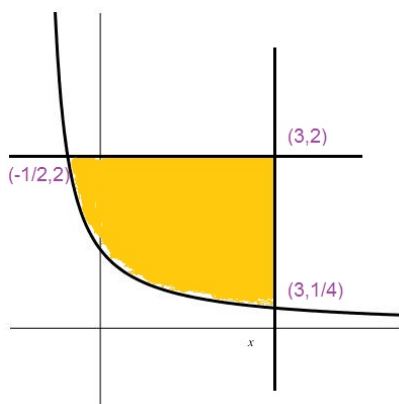
(b) $g(4) - g(1) = \int_1^{16} f(t) dt = 30$

(c) $g'(3) = -45$.

(d) $g''(1) = 20$.

3. $\int_1^3 -(y-1)(y-4) - (y-1) dy = \frac{4}{3}$

4. (a) .



(b) $\int_{-1/2}^3 \pi \left[2^2 - \left(\frac{1}{x+1} \right)^2 \right] dx$

(c) $\int_{-1/2}^3 2\pi(3-x) \left(2 - \frac{1}{x+1} \right) dx$

(d) $\int_0^3 2\pi x \left(2 - \frac{1}{x+1} \right) dx$