

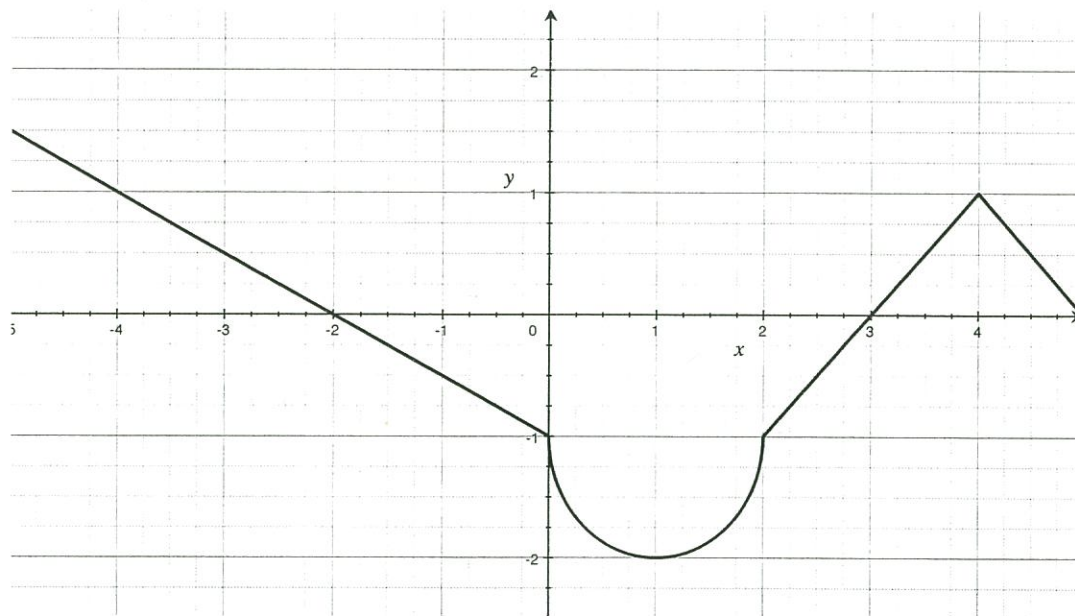
Math 105 Quiz 8

§5.1, 5.2, 5.6

Name: *key*

Show all work for credit.

1. The following graph of $g(x)$ is made up of basic geometric shapes (at times more than one at once). Determine the following.



(a) $\int_{-4}^2 g(x) dx = 2 - \frac{\pi}{2}$

(c) $\int_0^3 g(x) dx = -2\frac{1}{2} + -\frac{\pi}{2}$

(b) $\int_{-4}^0 g(x) dx = 0$

(d) $\int_5^3 g(x) dx = -1$

2. Use properties of the integral to find the following given that

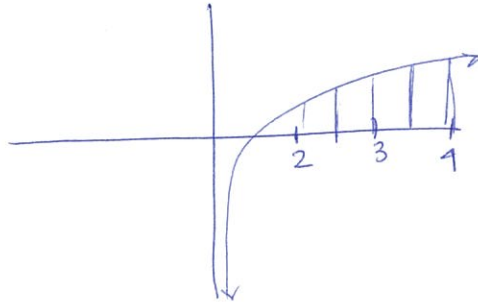
$$\int_{-1}^1 f(x) dx = B, \int_0^1 f(x) dx = C, \int_0^1 h(x) dx = D$$

(a) $\int_{-1}^0 f(x) dx = B - C$

(b) $\int_0^1 (f(x) + h(x)) dx = C + D$

3. Estimate the area under the curve $\ln(x)$ on the interval $[2,4]$ using right-hand and left-hand methods and 4 subintervals.

(a) Draw the graph.



$$[2, 2\frac{1}{2}], [2\frac{1}{2}, 3], [3, 3\frac{1}{2}], [3\frac{1}{2}, 4]$$

(b) $R_4 =$

$$.5 (\ln(2.5) + \ln(3) + \ln(3.5) + \ln(4)) \approx 2.326$$

(c) $L_4 =$

$$.5 (\ln(2) + \ln(2\frac{1}{2}) + \ln(3) + \ln(3.5)) \approx 1.98$$