

QUIZ 2: SECTION 5.2

Instructions: write your solutions to the following two questions on separate sheets of paper. Show all work to receive credit. You will have 25 minutes to complete the Quiz and 10 minutes to upload your solutions to the Crowdmark assessment “Quiz 2” located in the Assignments tab of the **Lecture** iLearn.

(1) [3pts] Graph the function $f(x) = x - 2$. Using this graph compute $\int_0^3 f(x)dx$.

(2) [3pts] Let $f(x)$ be a function such that

$$\int_0^2 f(x)dx = -10, \int_0^5 f(x)dx = 2.$$

Using Theorem 5.2.1 (provided below) evaluate the following:

(a) $\int_2^5 f(x)dx$

(b) $\int_5^2 3f(x)dx$.

Make sure you indicate which rules you are using at different stages.

Theorem 5.2.1 Properties of the Definite Integral

Let f and g be defined on a closed interval I that contains the values a , b and c , and let k be a constant. The following hold:

- $\int_a^a f(x) dx = 0$
- $\int_a^b f(x) dx + \int_b^c f(x) dx = \int_a^c f(x) dx$
- $\int_a^b f(x) dx = - \int_b^a f(x) dx$
- $\int_a^b (f(x) \pm g(x)) dx = \int_a^b f(x) dx \pm \int_a^b g(x) dx$
- $\int_a^b k \cdot f(x) dx = k \cdot \int_a^b f(x) dx$