

Name: _____

Quiz 7 (Version A)

Instructions: This quiz is closed book, closed note, and an individual effort. Electronic devices other than approved calculators are not allowed on your person (e.g., no cell phones or calculators with CAS). Answer each question. **Show all work to receive full credit.** Unless the question specifies, you may provide either an exact answer or round to two decimal places. If you get stuck, please attempt to explain what you want to do. This may give more partial credit.

1. Approximate the following integrals with a left-hand sum and a right-hand sum with $n = 3$ subdivisions. Determine for each which is an overestimate and which is an underestimate.

(a) $\int_1^4 3x^2 dx$

(b) $\int_0^3 e^{x^2} dx$

(c) $\int_1^7 \frac{1}{x^3 + 1} dx$

(d) $\int_1^3 2(3x + 1)^2 dx$

2. Let the function $f(x)$ be given below. Find the following (Write what part you are doing next to your work):

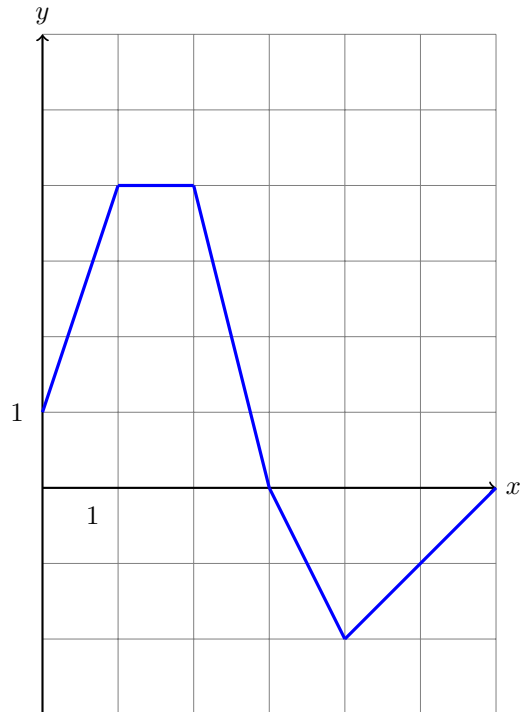
(a) $\int_0^2 f(x) dx$

(b) $\int_0^3 f(x) dx$

(c) $\int_3^6 f(x) dx$

(d) $\int_0^6 f(x) dx$

(e) Total area under $f(x)$ from 0 to 6.



3. Let $v(t)$ be the velocity of Spongebob walking to the Krusty Krab in feet per minute. If $\int_0^{10} v(t) dt = 1000$. interpret the meaning of this in the context of the problem.