

Assignment #9

Name _____

Due at 2:30pm, Wednesday, 29 November 2017

Use proper notation. Use complete sentences.

1. A tank is being filled with water for five hours. Every half-hour the flow rate of water into the tank, $r(t)$, is measured and recorded in units of gallons per hour. The results are tabulated below. Approximately how much water is added to the tank during this five-hour process?

t	0.	0.5	1.	1.5	2.	2.5	3.	3.5	4.	4.5	5.
$r(t)$	23.24	23.47	25.41	22.98	21.42	18.65	14.27	12.96	8.99	3.07	1.02

2. Evaluate each of the integrals. In each case, change the limits as you substitute variables.

(a) $\int_0^{\pi/4} \sec^2(x) \tan(x) dx$

(b) $\int_0^1 x^2 \sqrt{1-x} dx$