

Name:

Section 5.4 – example

Math 151

1. Oil leaks out of a container at a rate of $r = f(t)$ gallons per minute, where t is in minutes. Write a definite integral expressing the quantity of oil that leaks out of the container in the first hour.

$$\int_0^{60} f(t) dt$$

2. Pollution is removed from a lake at a rate of $f(t)$ kg/day on day t .

- (a) Explain the meaning of the statement $f(12) = 500$.

On day 12, the removal rate is 500kg/day

- (b) If $\int_5^{15} f(t) dt = 4000$, give the units of the 5, the 15, and the 4000.

Days, days, kilograms

- (c) Give the meaning of $\int_5^{15} f(t) dt = 4000$

4000 kg removed between day 5 and day 15.