Definite Integral & Reimann AP M/C Practice

t (hours)	4	7	12	15
$R(t)$ (liters/hour)	6.5	6.2	5.9	5.6

1. A tank contains 50 liters of oil at time $t = 4$ hours. Oil is being pumped into the tank at a rate $R(t)$, where $R(t)$ is measured in liters per hour, and t is measured in hours. Selected values of $R(t)$ are given in the table above. Using a right Riemann sum with three subintervals and data from the table, what is the approximation of the number of liters of oil that are in the tank at time $t = 15$ hours?

    (A) 64.9   (B) 68.2   (C) 114.9   (D) 116.6   (E) 118.2

2. The function f is defined by $(x) = \begin{cases} 2 & \text{for } x < 3 \\ x - 1 & \text{for } x \geq 3 \end{cases}$. What is the value of $\int_1^5 f(x)dx$?

    (A) 2   (B) 6   (C) 8   (D) 10   (E) 12