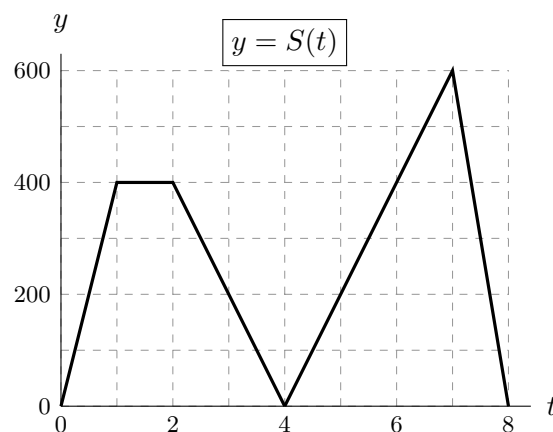


9. [9 points] Students from two rival universities had a competition to see who could clean up the most litter at a nature preserve.

University A went first, cleaning up litter from noon to 4pm. Each student from University A cleaned at a rate of 12 pounds of litter per hour.

Then University B cleaned up litter from 4pm to 8pm. Each student from University B cleaned at a rate of 9 pounds of litter per hour.

Let $S(t)$ be the number of students cleaning up litter at time t hours past noon. The graph of $S(t)$ is shown to the right.



- a. [2 points] Find the total amount of litter cleaned up by University A. Show your work.

Answer: _____ pounds

- b. [3 points] Find the total amount of litter cleaned up throughout the entire eight-hour competition. Show your work.

Answer: _____ pounds

- c. [4 points] The competition was broadcast live on TV. The number of people viewing the TV broadcast at time t hours past noon is given by the function

$$B(t) = 4S(t) + 200.$$

Find the average number of people viewing TV broadcast during the eight-hour competition.

Answer: _____ people