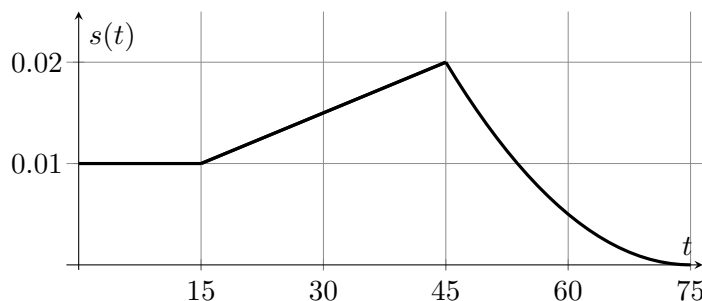


1. [9 points] Steph times their study sessions. Let  $t$  be the length in minutes, and let  $s(t)$  be the probability density function for  $t$ . A portion of the graph of  $s(t)$  is shown below. Also note that  $s(t)$ :

- is continuous;
- is constant for  $0 \leq t \leq 15$ ;
- is linear for  $15 \leq t \leq 45$ ;
- is concave up for  $45 \leq t \leq 75$ .



- a. [3 points] Find the proportion of Steph's study sessions that last between 15 minutes and 45 minutes. You do not need to simplify your answer but you should show your work.

**Answer:** \_\_\_\_\_

- b. [3 points] Which of the statements below is best supported by the expression  $s(55) \approx 0.01$ ? Circle the **one** best statement. No justification is required.

- i. Approximately 0.01% of sessions last *exactly* 55 minutes.
- ii. Approximately 1% of sessions last between 54 and 56 minutes.
- iii. Approximately 2% of sessions last between 54 and 56 minutes.
- iv. Approximately 10% of sessions last between 55 and 56 minutes.
- v. Approximately 55% of sessions last around 0.01 minutes.

- c. [3 points] Do any sessions last longer than 75 minutes? Give a brief explanation of your answer.

Circle one:

YES

NO

NOT ENOUGH INFORMATION

**Explanation:**