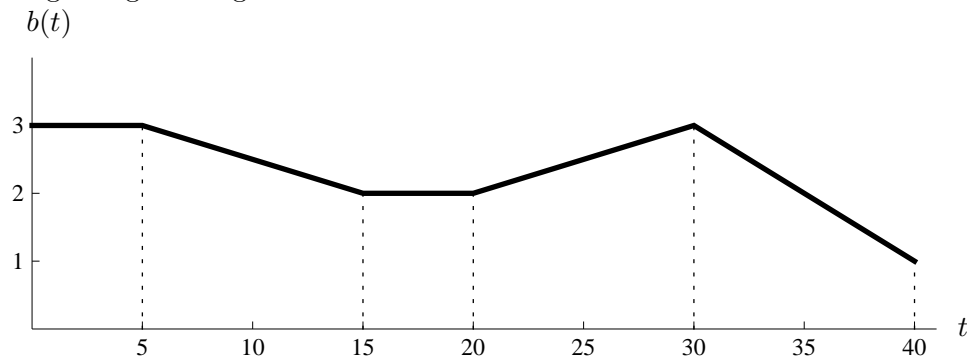


6. [11 points] During a recent practice, the UM basketball team was split up into a Maize team and Blue team. The teams played against each other for a full 40 minute game. The graph of the function $b(t)$ below shows the Blue team's scoring rate in points per minute t minutes after the beginning of the game.



The Maize team scored 2 points per minute for the first 30 minutes of the game and then they scored 3 points per minute for the last 10 minutes.

- a. [3 points] Calculate the exact value of the integral

$$\int_5^{15} (b(t) - 2) dt.$$

- b. [3 points] Give a practical interpretation of the integral from (a) in the context of the problem.
- c. [3 points] Calculate the average scoring rate of the Blue team during the first half of the game. Include units in your answer.
- d. [2 points] What was the final score of the game? You do not need to show your work.

Blue Team's Score=_____

Maize Team's Score=_____