

AP[®] CALCULUS AB
2017 SCORING GUIDELINES

Question 2

(a) $\int_0^2 f(t) dt = 20.051175$

20.051 pounds of bananas are removed from the display table during the first 2 hours the store is open.

2 : $\begin{cases} 1 : \text{integral} \\ 1 : \text{answer} \end{cases}$

(b) $f'(7) = -8.120$ (or -8.119)

After the store has been open 7 hours, the rate at which bananas are being removed from the display table is decreasing by 8.120 (or 8.119) pounds per hour per hour.

2 : $\begin{cases} 1 : \text{value} \\ 1 : \text{meaning} \end{cases}$

(c) $g(5) - f(5) = -2.263103 < 0$

Because $g(5) - f(5) < 0$, the number of pounds of bananas on the display table is decreasing at time $t = 5$.

2 : $\begin{cases} 1 : \text{considers } f(5) \text{ and } g(5) \\ 1 : \text{answer with reason} \end{cases}$

(d) $50 + \int_3^8 g(t) dt - \int_0^8 f(t) dt = 23.347396$

23.347 pounds of bananas are on the display table at time $t = 8$.

3 : $\begin{cases} 2 : \text{integrals} \\ 1 : \text{answer} \end{cases}$