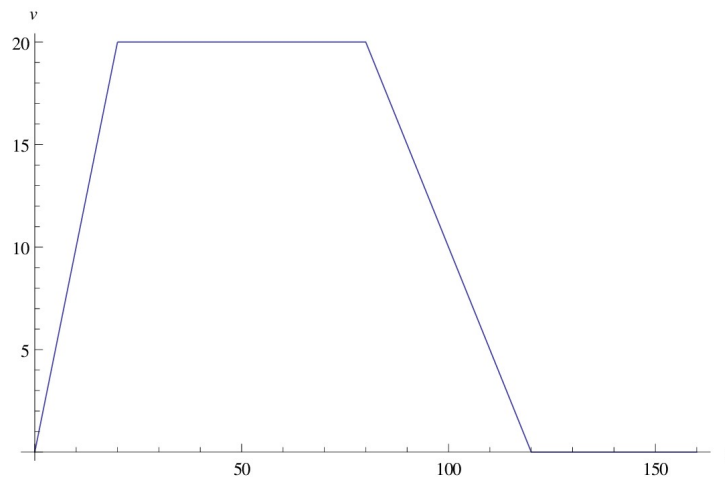


Question 37237

a)



b)

I. $S = \frac{1}{2} \cdot 20 \cdot 20 + 60 \cdot 20 + \frac{1}{2} \cdot 40 \cdot 20 = 1800 \text{ m}$ (These are the sums of the areas on the graph from $t=0$ to $t=120$)

II. Since the train was at rest from point C till point B, the displacement remains the same - $S=1800 \text{ m}$.

III. For:

$$0 < t < 20, \quad a = \frac{20 \frac{m}{s}}{20 s} = 1 \frac{m}{s^2}$$

$$80 < t < 120, \quad a = \frac{-20 \frac{m}{s}}{40 s} = -0.5 \frac{m}{s^2} .$$