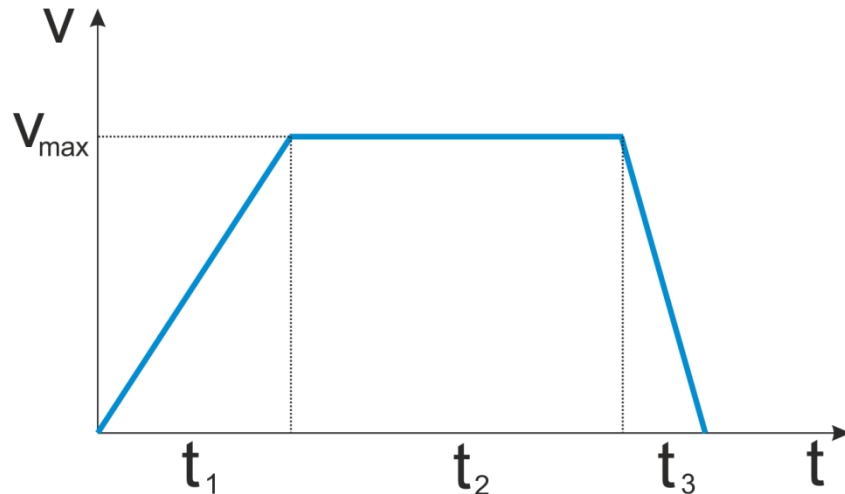


### Answer on Question #76235 Physics / Atomic and Nuclear Physics

An object starts from rest and accelerates for  $a = 0.24$  meter per second square for  $t_1 = 2$  minutes and continues at a steady speed for  $t_2 = 3$  minutes and slow down to stop for  $t_3 = 1$  minute. A) Draw graph for the motion. B) Calculate the maximum velocity in km/hr. C) Determine the retardation. D) Find the displacement in 5 minutes.

**Solution:**

A)



$$B) v_{\max} = at_1 = 0.24 \times 2 \times 60 = 28.8 \frac{\text{m}}{\text{s}} = 103.68 \frac{\text{km}}{\text{h}}$$

$$C) a_3 = \frac{0 - v_{\max}}{t_3} = \frac{0 - 28.8}{60} = -0.48 \frac{\text{m}}{\text{s}^2}$$

$$D) s = \frac{v_{\max}}{2} t_1 + v_{\max} t_2 = \frac{28.8}{2} \times 2 \times 60 + 28.8 \times 3 \times 60 = 6912 \text{ m}$$

**Answers:**  $103.68 \frac{\text{km}}{\text{h}}$ ,  $-0.48 \frac{\text{m}}{\text{s}^2}$ ,  $6912 \text{ m}$

Answer provided by <https://www.AssignmentExpert.com>