2.2. Model: We will consider Larry to be a particle.

Visualize:

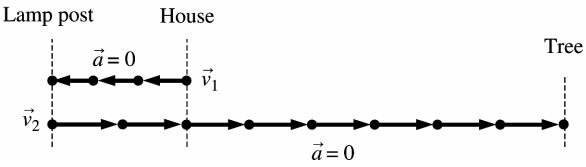
Known

$x_0 = 600$ yds
$t_0 = 9{:}05$
$x_1 = 200$ yds
$t_1 = 9{:}07$
$a = 0$
$x_2 = 1200$ yds
$t_2 = 9{:}10$

Find

$v_1 \quad v_2 \quad v_{avg}$

Pictorial representation



Solve: Since Larry's speed is constant, we can use the following equation to calculate the velocities:

$$v_s = \frac{s_f - s_i}{t_f - t_i}$$

(a) For the interval from the house to the lamppost:

$$v_1 = \frac{200 \text{ yd} - 600 \text{ yd}}{9{:}07 - 9{:}05} = -200 \text{ yd/min}$$

For the interval from the lamppost to the tree:

$$v_2 = \frac{1200 \text{ yd} - 200 \text{ yd}}{9{:}10 - 9{:}07} = +333 \text{ yd/min}$$

(b) For the average velocity for the entire run:

$$v_{avg} = \frac{1200 \text{ yd} - 600 \text{ yd}}{9{:}10 - 9{:}05} = +120 \text{ yd/min}$$