Solution - Num. Integration - Air Resistance

For trapezoidal rule $I = \frac{(b-a)}{2n}\left[f(x_0) + 2\sum_{i=1}^{n-1} f(x_i) + f(x_n)\right]$

so we need to calculate the sum...

Note: $\tanh(x) = \frac{e^x - e^{-x}}{e^x + e^{-x}}$

$v(t_0) = 0$
$v(t_1) = v(2.5) = 22.817$
$v(t_2) = v(5) = 38.187$
$v(t_3) = v(7.5) = 45.992$
$v(t_4) = v(10) = 49.393$

Now we can calculate the integral...

$$I = \frac{(10-0)}{2(4)}\left(0 + 2(22.817 + 38.187 + 45.992) + 49.393\right)$$

$$\boxed{I = 329.23 \text{ m}}$$