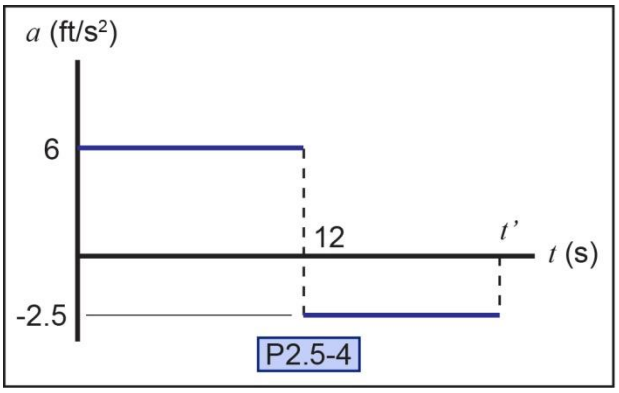
P2.5-4) A delivery truck travels along a straight road while accelerating and decelerating as described in the given graph. The truck starts from rest at time t = 0 s and returns to rest at the unknown time t'. Draw the v-t and s-t graphs for the truck during this time period. Include scales on the axes and determine the time t' at which the truck comes to a stop.



P2.5-4

Given:

Find:

Solution:

Plot the velocity

What is $v(t)$ between 0 and 12 s?

$v(t)$ = _____

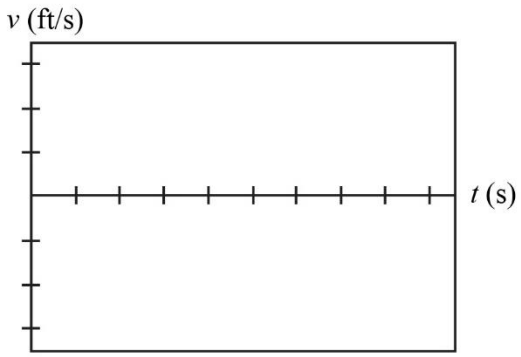
What is $v(t)$ between 12 and t' s?

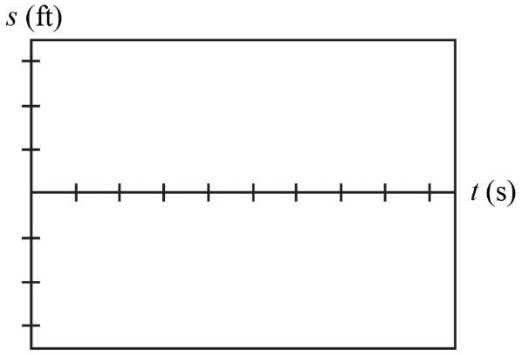
$v(t)$ = _____

$v_{t = 12\ s}$ = 72 ft/s

Determine the stop time.

t' = _____





Plot the position

What is $s(t)$ between 0 and 12 s?

$s(t)$ = _____

$s_{t = 12\ s}$ = 432 ft

What is $s(t)$ between 12 and t' s?

$s(t)$ = _____

$s_{t = 30\ s}$ = 1468.8 ft