**P2.4-3)** A racecar starts from rest and accelerates for 15 seconds before the driver applies the brakes and brings the car to a stop at $t = 25$ s. A graph of the car's velocity as a function of time is given. Use the given graph to estimate the following quantities. Remember units and show work.

    (a) car's velocity at $t = 10$ seconds
    (b) car's acceleration at $t = 10$ seconds
    (c) distance traveled by the car while it is accelerating
    (d) distance traveled by the car while it is braking

P2.4-3
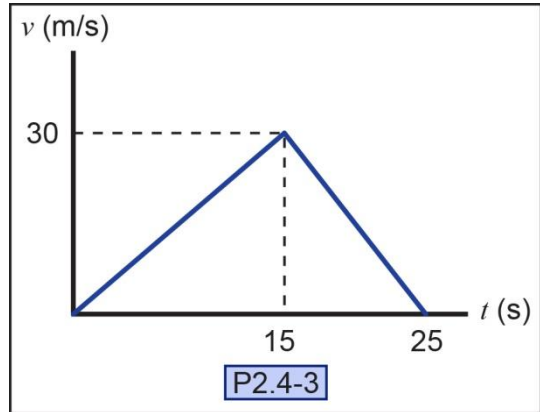
Given:

Find:

Solution:

Determine the car's acceleration at 10 s.

What is the slope of $v(t)$ between 0 and 15 s?

$a_{t\,=\,10s} =$ _____

Determine the car's velocity at 10 s.

What is the equation for $v(t)$ between 0 and 15 s?

$v_{t\,=\,10s} =$ _____

Determine the distance traveled by the car between 0 at 15 s.

$\Delta s_{t\,=\,0\text{-}15} =$ _____

Determine the distance traveled by the car between 15 at 25 s.

$\Delta s_{t\,=\,15\text{-}25} =$ _____