P3.2-3) A particle having a constant velocity starts at the point within the Cartesian coordinate system defined by (1 in, 2 in) and then moves to point (5 in, 4 in). The particle starts at the first point at $t = 0$ s and it takes 2 seconds to reach the second point. Where is the particle located when $t = 3$ s?

Given:

Find:

Solution:

Calculate the particle's displacement.	**Derive the particle's position as a function of time.**

$\mathbf{r}_{initial} =$ _____

$\mathbf{r}_{final} =$ _____

$\Delta\mathbf{r} =$ _____

Calculate the particle's average velocity.

In this case, is the average velocity and the instantaneous velocity equal?

Yes   No

$\mathbf{r}(t) =$ _____

What is the particle's position at $t = 3$ seconds?

$\mathbf{v} =$ _____ $\mathbf{r}_{t=3} =$ _____