

In the discussion area, solve your two custom application problems using the concepts you have learned. Apply your CINs in the bracketed spaces (the first digit is **[a]**, the second digit is **[b]**, and so forth.)

Problems

1. The x- and y-coordinates of a moving particle are given by two parametric equations..

$$\begin{aligned}x &= [a] t^2 + t \\ y &= 2 - [c] t\end{aligned}$$

Find the magnitude and direction of velocity at $t = 3$ sec. Distance is measured in meters. Round your answers to one decimal place and don't forget to use the degree symbol.

2. A 6-ft tall man walks away from a **[a]*[c]**-ft tall streetlight at **[b]** ft/sec. How fast is his shadow increasing when he is **[e]** feet from the streetlight?