# Exercises:

1. A particle travels along the $x$-axis with acceleration $a(t)$ given by $a(t) = \cos(t) + 3t$. How far has the particle traveled from its initial point after time $t = \frac{3\pi}{4}$ seconds if the particle had an initial velocity of 0?

2. Dr. Bob is driving at 70 miles per hour when he suddenly realizes that he has to turn off at the next exit in 500 feet. He applies the brake and the car slows down at an acceleration of $a(t) = -0.5 * t$ miles per square hours. The maximum exit ramp velocity is 45 miles per hour. Will Dr. Bob make it? If so, what will his velocity be? If not, how much more distance would it take Dr. Bob to slow down to 45 miles per hour?