

Problem 1. A Car accelerating at a constant rate goes from 0 to 60 miles per hour in 6 seconds, how far does the car travel in this time?

Problem 2. Find a solution (or give a reason why it does not exist) to the differential equation $x^2 \frac{dy}{dx} = y + 1$ under each of the following initial conditions:

- a) $x = 1, y = 0$
- b) $x = 1, y = -2$
- c) $x = 2, y = -1$