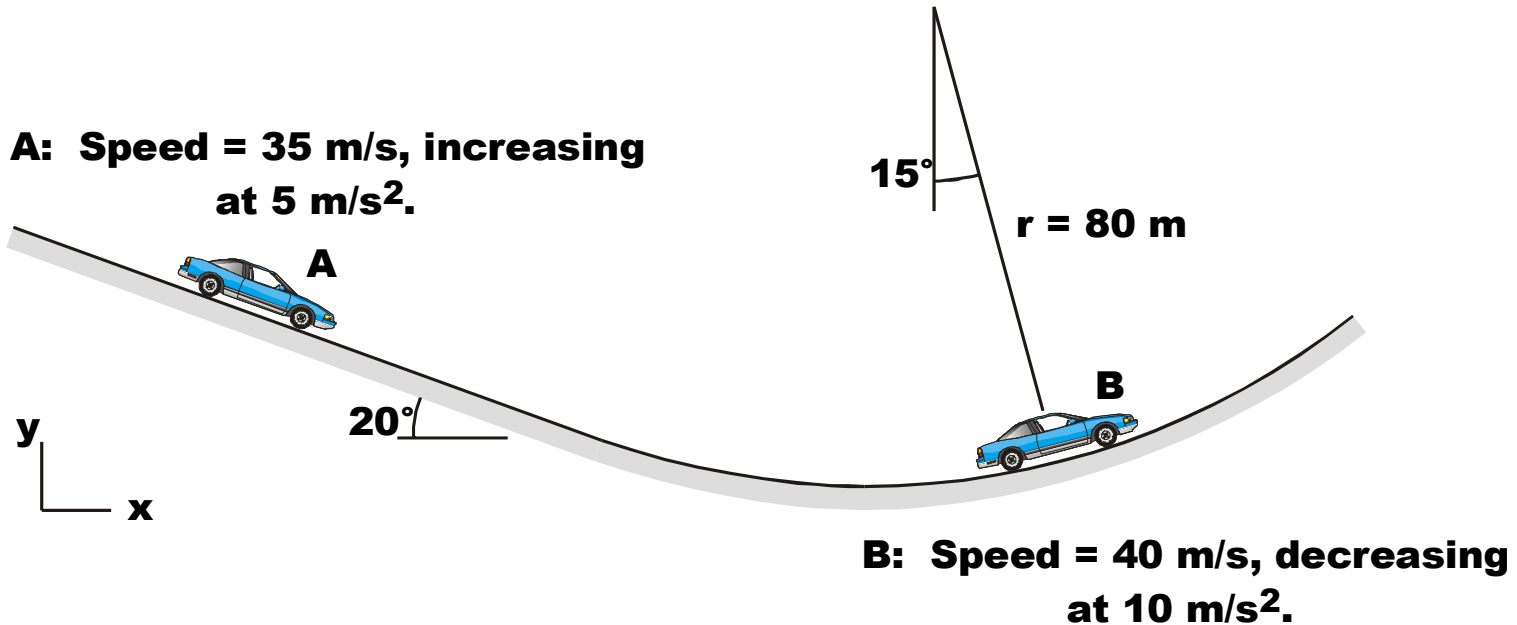
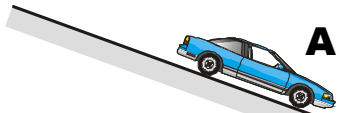


Final Exam, Spring 2005A: Problem 1 (Particle Kinematics)

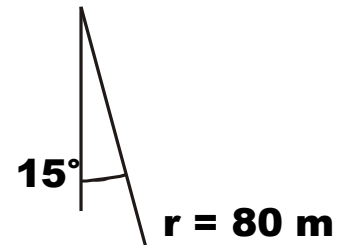
1. (25 points) Automobile A has a speed of 35 m/s, increasing at 5 m/s^2 , and automobile B has a speed of 40 m/s, decreasing at 10 m/s^2 on the rural road shown below. Please determine, as polar or Cartesian vectors, $\mathbf{v}_{B/A}$ and $\mathbf{a}_{B/A}$.



**A: Speed = 35 m/s, increasing
at 5 m/s².**



20°



**B: Speed = 40 m/s, decreasing
at 10 m/s².**