

Phys107 HW#03

Gladden

Solutions to Chapter 3 Exercises

11. The dragster rounded the curve at a constant speed of 100 km/h." Constant velocity means not only constant speed but constant direction. A car rounding a curve changes its direction of motion.

17. (a) Yes. For example, an object sliding or rolling horizontally on a frictionless plane. (b) Yes. For example, a vertically thrown ball at the top of its trajectory.

28. In the absence of air resistance, the acceleration will be g no matter how the ball is released. The acceleration of a ball and its speed are entirely different.

40. The ball on B finishes first, for its average speed along the lower part as well as the down and up slopes is greater than the average speed of the ball along track A.

Problems

10. From $d = \frac{1}{2}gt^2 = 5t^2$, $t = \sqrt{d/5} = \sqrt{(0.6)/5} = 0.35$ s. Double for a hang time of **0.7 s**.