

Quiz #2: Kinematics in One Dimension

Problem 1 (1.5 points)

A car can go from 0 to 30 m/s in 12 s. A second car is capable of twice the acceleration of the first car. How much time will this second car take to go from 0 to 60 m/s?

- a) 3.0 s
- b) 6.0s
- c) 9.0 s
- d) 12 s
- e) none of the above

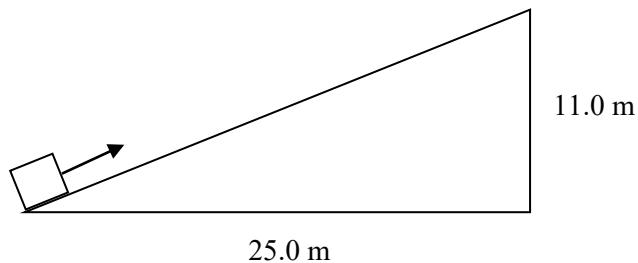
Problem 2 (1.5 points)

Ball A is dropped from the top of a building. One second later, ball B is dropped from the same building. As time progresses, the distance between them

- a) increases.
- b) remains constant.
- c) decreases.
- d) cannot be determined from the information given.

Problem 3 (3.5 points)

A crate is sent up a frictionless inclined plane as shown in the figure to the below. The initial speed of the crate is 12.5 m/s. How fast is the crate moving when it has traveled a distance of 17.0 m along the incline?



Problem 3 (4 points)

A rock is thrown vertically upward (in the absence of air resistance) from ground level at time $t = 0$ s. At $t = 2.50$ s, it passes the top of a tall tower, and 1.00 s later it reaches its maximum height. What is the height of the tower?