

Monday, November 26/12  
Science 10

Announcements

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1. Bell Work
  2. Understanding Concepts - Page 473, #5-8  
Optional -> #9
  3. Displacement During Constant Acceleration
  4. Quiz - Chapter 12 Problems -> Thursday
  5. Activity - Acceleration of a Cart - This will be optional.

} HW P4



## Bell Work - Monday, Nov. 26/12

Rearrange  $\vec{\Delta d} = \frac{(\vec{v}_i + \vec{v}_f)t}{2}$  for  $\vec{v}_i$ .

$$2 \vec{\Delta d} = \frac{(\vec{v}_i + \vec{v}_f)t}{2}$$

$$\frac{2 \vec{\Delta d}}{t} = \frac{(\vec{v}_i + \vec{v}_f)t}{t}$$

$$\frac{2 \vec{\Delta d}}{t} = \vec{v}_i + \vec{v}_f$$

$$\boxed{\frac{2 \vec{\Delta d}}{t}} - \vec{v}_f = \vec{v}_i + \vec{v}_f - \vec{v}_f$$
$$\vec{v}_i = \frac{2 \vec{\Delta d}}{t} - \vec{v}_f$$

## Page 473 - Do #5-8, #9 Optional

### Understanding Concepts

For questions 5 to 9, assume constant acceleration and calculate your answers from defining equations.

5. A dragster slows down from 28 m/s [N] to 13 m/s [N] in a time of 12 s using a parachute and brakes. Calculate the displacement during this acceleration.
6. A baseball pitcher throws the ball at 28 m/s [S] toward a batter. The ball is in contact with the bat for 2.0 ms and leaves the bat travelling at 46 m/s [N]. What is the displacement of the ball while in contact with the bat?
7. A golfer hits a golf ball sitting at rest on a tee. The ball leaves the club at 64 m/s after a displacement of 35 mm. For how long was the club in contact with the ball?
8. While driving along a highway at 25 m/s [N], a driver spots an animal crossing the road. She brakes sharply for 2.0 s. If the car's acceleration is  $10 \text{ m/s}^2$  [S], what is the displacement of the car while braking?
- ★ 9. A speedboat travels at 6.0 m/s [E] for 90 s and then accelerates uniformly at  $2.0 \text{ m/s}^2$  [E] for 5.0 s. Calculate the displacement of the speedboat.