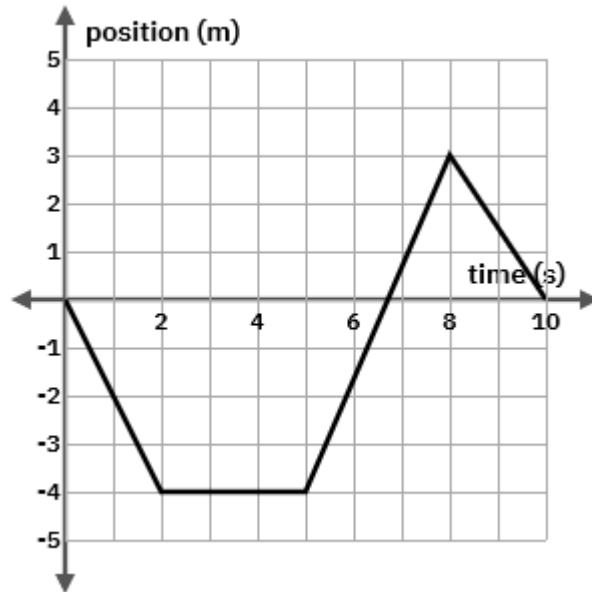


In Motion Hand-in Assignment

Name: _____

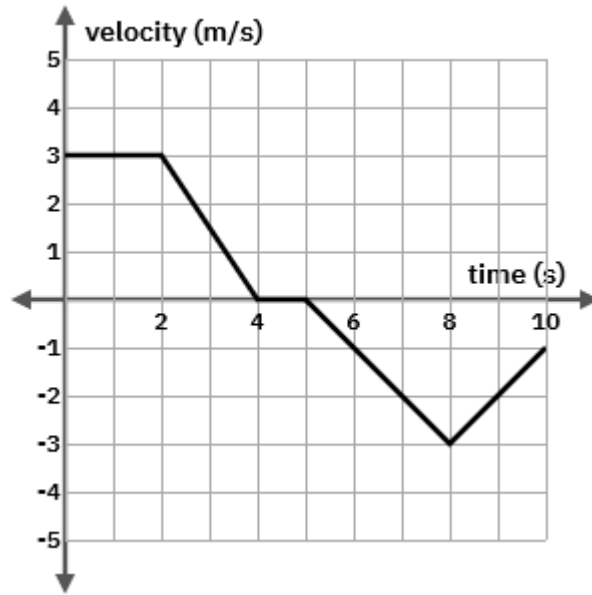
1. The following graph shows the position of an object with respect to time. Positive values are North.



Describe the motion during the time intervals indicated.

- (a) 0 – 2 seconds _____
- (b) 2 – 4 seconds _____
- (c) 5 – 6 seconds _____
- (d) 8 – 10 seconds _____

2. The following graph shows the velocity of an object with respect to time. Positive position is North.



Describe the motion during the time intervals indicated.

- (a) 0 – 2 seconds _____
- (b) 2 – 4 seconds _____
- (c) 6 – 8 seconds _____
- (d) 8 – 10 seconds _____

3. Suzy travels 16 km in 0.5 hours. What is her average speed in m/s?

4. One lap around a typical oval running track is 400 m. A particular race requires that people run around the track 3.75 times.
- (a) What is the length of the race (distance)?
- (b) What is the displacement of the runners?
5. A runner runs a race at a constant velocity of 2 m/s. During the last 20 seconds of the race, he constantly accelerates until he reaches a velocity of 5 m/s. Calculate his acceleration.
6. A car has an initial velocity of 2 m/s and a final velocity of -3 m/s. Describe how this is possible.
7. A car is slowing down while moving forward. Would this be considered positive or negative acceleration?

8. A car is traveling with a speed of 20 m/s. The driver sees an obstacle on the road and needs to stop.
- (a) If the driver has a reaction time of 0.8 s, how far will the car travel during this reaction time?
- (b) Calculate the braking distance for this driver on dry pavement ($k=0.06$).
- (c) Calculate the total distance it takes for the car to stop.