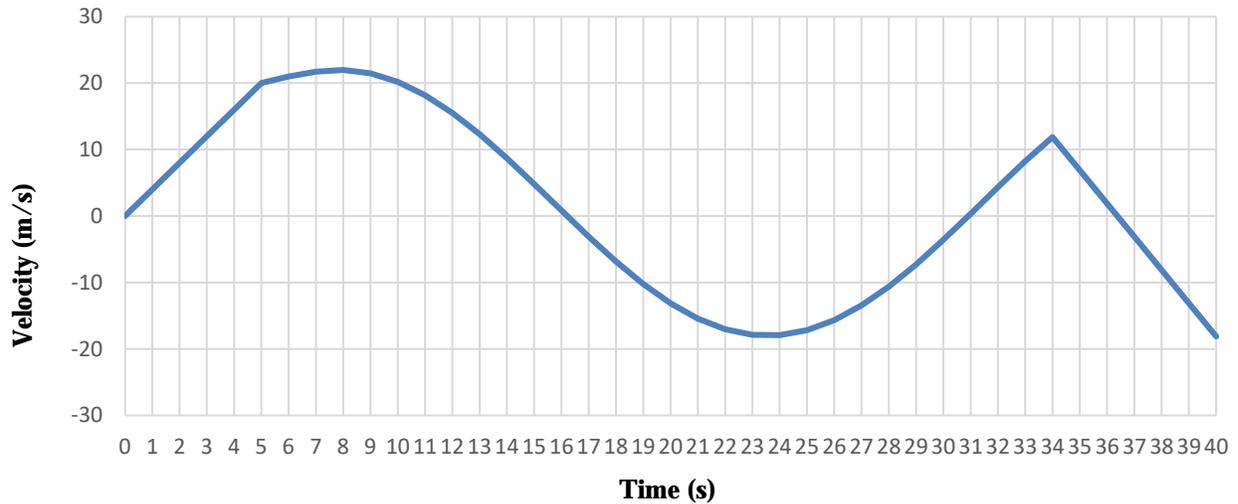


Extra Practice Problems for Chapter 2

Questions 1-4 refer to the graph below, for which the positive direction is east.



1. Over what time intervals is the object accelerating to the east?
2. Over what time intervals is the object speeding up?
3. At what times is the acceleration zero?
4. What is the instantaneous acceleration at 37 s?
5. A 34.6-g object is being pushed by a 3.4 N force west. What is its acceleration?
6. If the object in problem 5 started from rest, how many seconds would it take for it to reach a velocity of 916 m/s west?
7. A 7.9-kg bicycle is traveling at 9.2 m/s north. If it travels 7.1 m after the brakes are applied before it comes to rest, what constant force did the brakes apply?
8. A ball is thrown with a velocity of 2.8 m/s up. After 4.2 seconds, it lands on the ground. How far above the ground was it launched?
9. A bullet reaches a maximum height of 465 m when shot straight up in the air. At what velocity did it leave the gun?
10. An astronaut and her gear weigh 310 pounds on earth. What is the weight on Mars, where the acceleration due to gravity is 12.2 ft/s^2 ?