1. Describe what is meant by frame of reference and why it is important.

2. Define scalars and vectors. Provide three examples of each.

3. Calculate the average velocity and speed of the planet Saturn the instant it has traveled half of its circular orbit.

4. A football is thrown 35 m [W], 60 m [E], 12 m [E], 45 m [W] and finally 75 m [W]. All of this happens in 62 seconds. Calculate the average speed and velocity of the football.

5. Use the Graph below to answer the following questions:
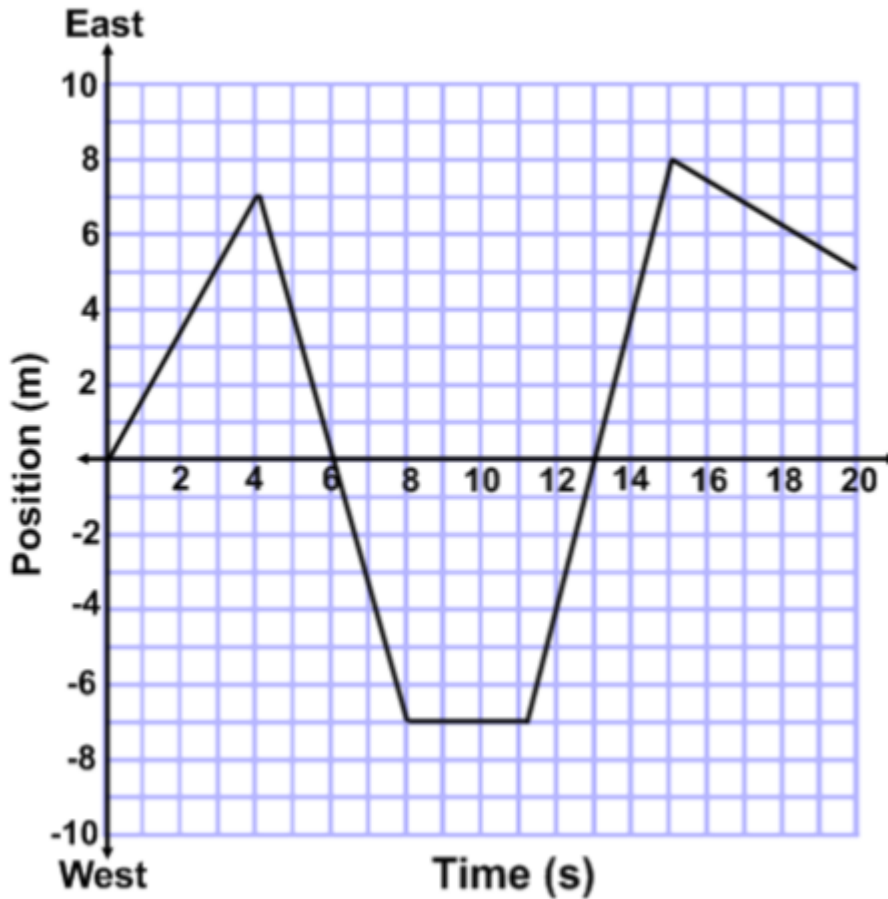
a. Calculate the velocity between 4 & 6 seconds.

b. At what time(s) was the object back at the starting position?

c. At what time(s) did the object change direction?

d. Calculate the total distance traveled during the 20 seconds.

e. Calculate the average speed and velocity for the 20 seconds.