1. Calculate the acceleration in each case:

   a. $\Delta v = 72\,m/s\,[W]\,;\Delta t = 6.0s$

   b. $\Delta v = 8.4\,m/s\,[E]\,;\Delta t = 6.0s$

   c. $\Delta v = -35\,m/s\,[S]\,;\Delta t = 6.0s$

   d. $\Delta v = 42\,m/s\,[W]\,;\Delta t = 1.5s$

2. A motorcyclist took only 6.0 seconds to go from rest to 78 m/s earning the world record for motorcycle acceleration.

   a. Calculate the magnitude of the record average acceleration.

   b. How far did the motorcycle travel during this time interval?

3. Calculate the average acceleration needed by a train travelling initially at 12 m/s [E] to stop in 120s.

4. A car speeds up from rest to 100 km/hr in 60 seconds.

   a. What is the magnitude of the acceleration in m/s^2?

   b. How far did the car travel during this time period?

5. A ball is rolling with a velocity of 2.4 m/s [W] when it hits a wall and bounces. After bouncing off the wall the ball's velocity 0.62s later is 2.0 m/s [E]. Calculate the balls average acceleration during this time period.

6. The table below shows the change in velocity over time for an accelerating missile as it starts its launch.

   a. Plot the velocity-time graph and determine the average acceleration.

   b. Calculate displacement at each time shown and plot the displacement-time graph.

time (s)	Velocity (m/s [E])	displacement (m [E])
0.0	0.0	0.0
0.2	15	
0.4	30	
0.6	45	
0.8	60	
1.0	75	