Task

Question 1
1.1 What is the displacement of the ball?
1.2 What distance has the ball moved through?

Question 2
John runs 10 metres forwards and walks 5 metres back, and takes 20 seconds to do this.
2.1 What is John’s average speed?
2.2 What is John’s average velocity?

Question 3
A car travels 50 kilometres along a straight road in 30 minutes.
3.1 Calculate the speed of the car in kilometres per hour.
3.2 Convert this speed to metres per second.

Question 4
If a car travels along a straight road at 120 km·h\(^{-1}\) for 15 minutes, how far in metres has it travelled?

Question 5
If a car travels in a straight line at 80 km·h\(^{-1}\) for 15 minutes, and then 100 km·h\(^{-1}\) for 30 minutes, what is the average speed of the car in kilometres per hour?

Question 6
What is the acceleration of a car travelling west, if it goes from rest to a velocity of 50 km·h\(^{-1}\) in 6s? Hint: Remember to convert the units to SI units.

Question 7
A driver travels east at 100 km·h\(^{-1}\) when she sees a speed trap ahead. The speed restriction for the road is set for 80 km·h\(^{-1}\). It takes her 4s to slow down to the correct speed. What is the car’s acceleration?