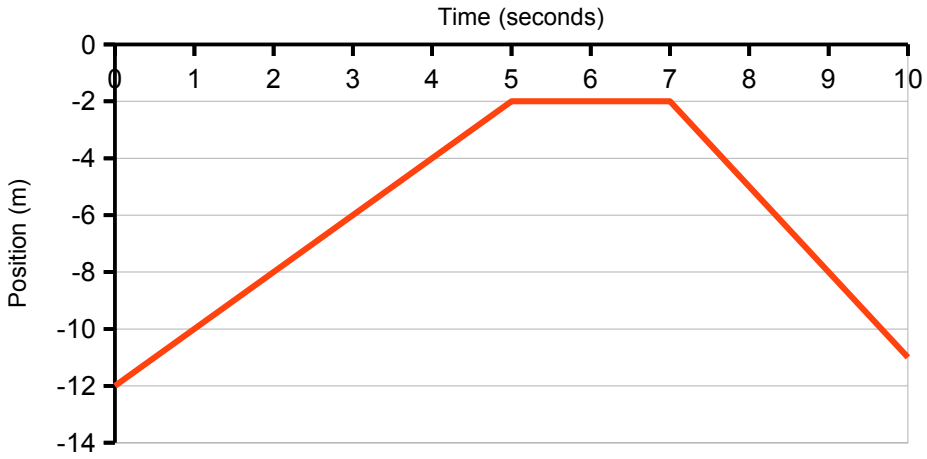
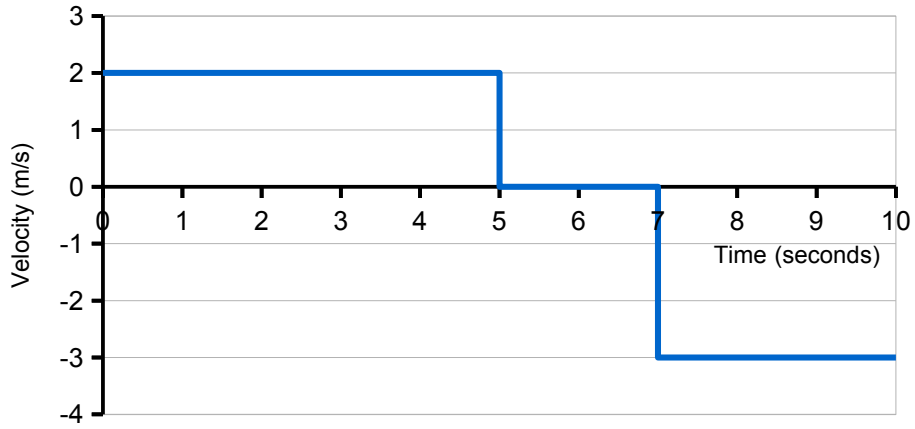
ANSWERS THE MOVING MAN 2

QUESTION 1

a) In the first 5 seconds, the moving man displacement is Δx = 5 s x 2 m/s = 10 m
Therefore, his new position is x_f=-12 + 10 = -2 m
He stops for 2 seconds, so when t = 7 s, his position is still x = - 2 m
When he moves again, his displacement is Δx = 3 s x (-3) m/s = - 9 m
His final position, after 10 s, is -2 + (-9) = -11 m
b)





QUESTION 2

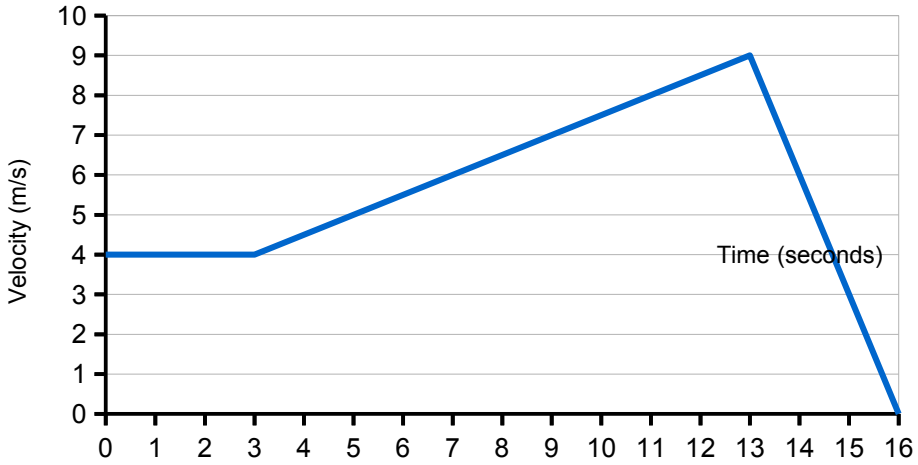
a) We calculate acceleration as:

$$a=\frac{v_f-v_i}{\Delta t}=\frac{9\,m/s-4\,m/s}{10\,s}=0{,}5\,m/s^2$$

b) In this case, v_f=0 m/s and v_i = 9 m/s, thus:

$$\Delta t=\frac{v_f-v_i}{a}=\frac{0\,m/s-(-9)\,m/s}{-3\,m/s^2}=3\,s$$

c)


Velocity (m/s)
10
9
8
7
6
5
4
3
2
1
0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
Time (seconds)