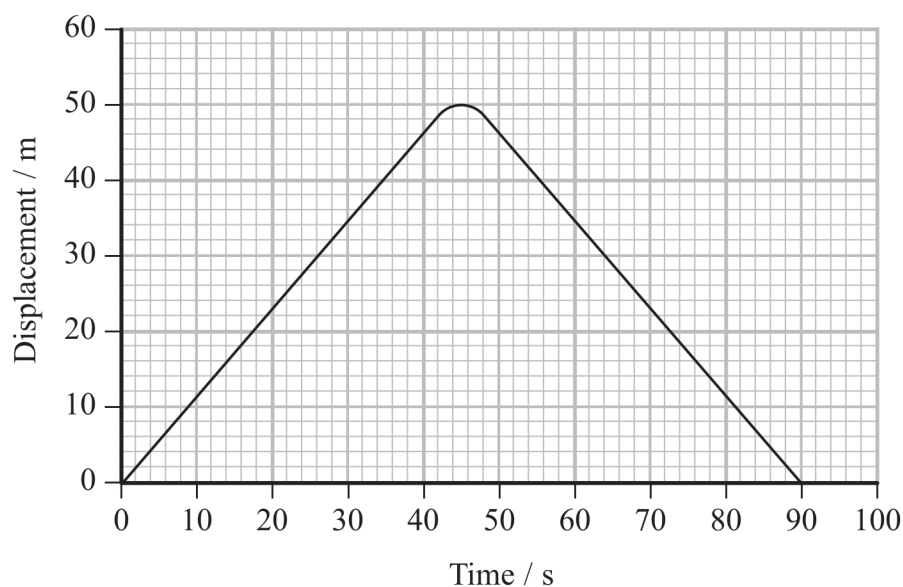
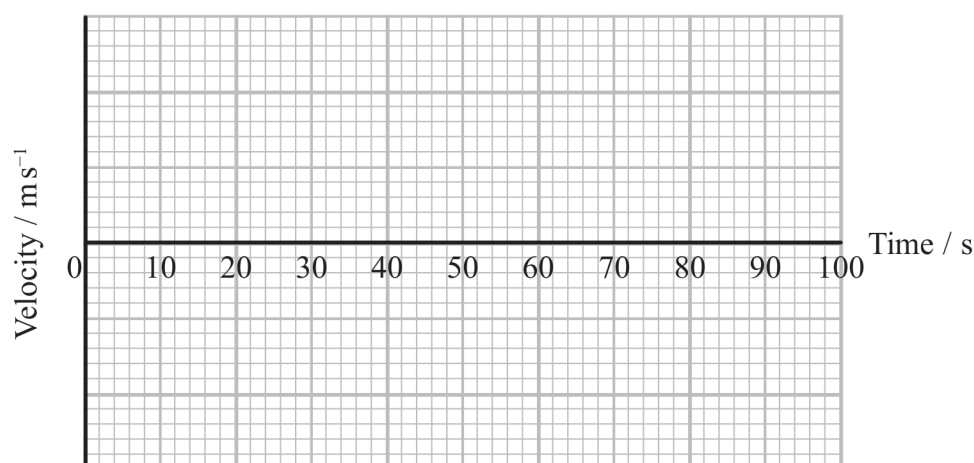


- 13 A swimmer swims a 100 m race. A simplified displacement-time graph for the swimmer is shown.



- (a) Draw a corresponding velocity-time graph for the motion of the swimmer on the axes below. Show all working in the space below.

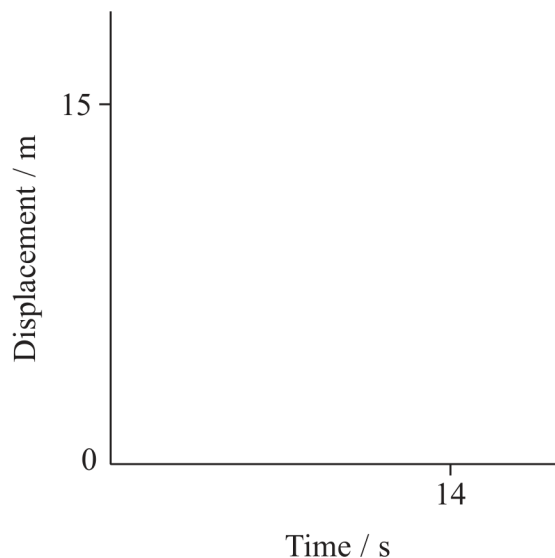
(4)



- (b) To increase her initial speed, the swimmer began the race by gliding underwater for 15 m and then began to use her arms and legs. This was not represented on the simplified displacement-time graph.

- (i) Sketch onto the axes below to show the actual variation of displacement with time for the first 15 m of the race.

(2)



- (ii) Explain one other way in which the motion of the swimmer has been simplified when drawing the displacement-time graph.

(2)

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(Total for Question 13 = 8 marks)