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| **Multi-Stage Constant Acceleration Problems** | | | | | |
| **(a)** | | | A particle travels in a straight line from A to B with a constant acceleration of . After seconds the particle reaches B, where it has a velocity of . Its acceleration then changes to and it continues to travel in a straight line from B to C, a distance of m. Find the initial velocity of the particle, the total distance travelled and the total time taken. | | |
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| **A to B** | | | | **B to C** | **Working and Answers** |
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| **(b)** | | A particle sets off from A with an initial velocity of . It travels in a straight line for seconds with a constant acceleration of until it reaches B. The acceleration of the particle then changes to and the particle travels a further m over seconds, until it reaches point C. Find the acceleration from A to B, and the total distance travelled by the particle. | | | |
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| **A to B** | | | | **B to C** | **Working and Answers** |
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| **(c)** | A particle travels in a straight from A to C through B, where AB=BC. The particle starts from rest at A and moves with a constant acceleration of until it reaches B. The particle then continues in the same direction, decelerating at a constant rate until it reaches C. The time taken from B to C is seconds and the velocity at C is . Find the velocity at B, the total distance travelled and the deceleration from B to C. | | | | |
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| **A to B** | | | | **B to C** | **Working and Answers** |
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