

Constant acceleration

<p>A particle moving in a straight line is decelerating at a constant rate of 6ms^{-1}.</p> <p>How long will it take to go from a speed of 20ms^{-1} to a speed of 8ms^{-1}?</p>	<p>A book of mass 2kg falls from a shelf 150cm above the floor.</p> <p>Find the speed with which the book hits the floor.</p>	<p>A ball is thrown vertically upwards and takes 3 seconds to reach its highest point.</p> <p>Find the first time the ball is at a height of 39.2m</p>
<p>A train travelling at 35ms^{-1} brakes to a speed of 21ms^{-1} over a distance of 350m.</p> <p>Calculate its deceleration.</p>	<p>A car accelerates from rest at 0.7ms^{-2} for 6s. It then applies its brakes and comes to rest in a distance of 10.5m. Find the total distance travelled and total time taken.</p>	<p>A dog accelerates from rest to 15ms^{-1} in a distance of 30m. Find its acceleration.</p>
<p>A particle is thrown upwards with a velocity of 34.3ms^{-1}.</p> <p>Find how long it takes to reach a height of 49m above the ground.</p>	<p>A stone is dropped from a cliff into the sea below. If the stone hits the water with a speed of 14ms^{-1} find the height of the cliff.</p>	<p>A particle is moving along a straight line with constant acc^n. It starts from A with velocity of 3ms^{-1} and passes points B and C after 2 and 5 seconds. AC is 40m.</p> <p>Find the acceleration of the particle.</p>

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Answers

$t = 2 \text{ s}$	5.42 m s^{-1}	$t = 2 \text{ s}$
1.12 m s^{-2}	23.1 m 11 s	3.75 m s^{-2}
$t = 2 \text{ s}$	10 m	$a = 2 \text{ m s}^{-2}$