Name_____

Acceleration Calculations

Acceleration means a change in speed or direction. It can also be defined as a change in velocity per unit of time. It is measured in units such as km/h/s and m/s/s (m/s^2).

$$a = \frac{v_f - v_i}{t}$$

where a = acceleration
v_f = final velocity
v_i = initial velocity
t = time

Calculate the acceleration for the following data.

	Initial Velocity	Final Velocity	Time	Acceleration
1.	0 km/h	24 km/h	3 s	_____
2.	0 m/s	35 m/s	5 s	_____
3.	20 km/h	60 km/h	10 s	_____
4.	50 m/s	150 m/s	5 s	_____
5.	25 km/h	1,200 km/h	2 min.	_____

6. A car accelerates from a standstill to 60 km/h in 10.0 seconds.

   What is its acceleration? _____

7. A car accelerates from 25 km/h to 55 km/h in 30 seconds.

   What is its acceleration? _____

8. A train is accelerating at a rate of 2.0 km/hr/s. Its initial velocity is 20 km/h.

   What is its velocity after 30 seconds? _____

9. A runner achieves a velocity of 11.1 m/s 9 seconds after he begins.

   What is his acceleration? _____

   What distance did he cover? _____

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