

Distance, Speed and Acceleration Questions

1. In uniform or constant speed, the speed is the same during each time interval. In constant acceleration, what is the same in each time interval?
2. You and your friend are on your bicycles and accelerate from rest. If your average acceleration is double that of your friend, how will your change in speed compare with your friend's after the same time interval?
3. In a road test, car A accelerates from rest (0 km/h) to 100.0 km/h in 16.0 s and car B takes 8.0 s in the same test. Without actually calculating it, which car has the greater average acceleration? How do you know?
4. It is said that nobody is killed by falling, only by the sudden stop at the end of the fall. Interpret this statement in terms of acceleration. How do stunt performers survive their falls?
5. The human heart pumps about 60 mL of blood into the aorta during a single stroke, which lasts about 0.1 s. In a single stroke, a pulse of blood is accelerated from rest to about 50 cm/s. Calculate the average acceleration of the blood in metres per second squared.
6. A car accelerates from rest to 50.0 km/h in 8.20 s.
 - a) What is the average acceleration of the car in kilometres per hour per second?
 - b) Assuming constant acceleration, what time would the car take to accelerate from 40 km/h to 60 km/h?