6. What is the acceleration of a racing car if its speed is increased uniformly from 44.0 m/s to 66.0 m/s over an 11.0 s period?

7. An engineer is to design a runway to accommodate airplanes that must gain a ground speed of 360. km/h (approx. 225 mi/h) before they can take off. These planes are capable of being accelerated uniformly at the rate of 3.60×10^4 km/h^2.
   a. How many kilometers long must the runway be?
   b. How many seconds will a plane need to accelerate to take-off speed?

8. A plane flying at the speed of 150. m/s is accelerated uniformly at a rate of 5.00 m/s^2.
   a. What is the plane's speed at the end of 10.0 seconds?
   b. What distance has it traveled?

9. A Tokyo express train is accelerated from rest at a constant rate of 1.00 m/s^2 for 1.00 **minute**. How far does it travel during this time?

10. In a vacuum tube, an electron is accelerated uniformly from rest to a speed of 2.60×10^5 m/s during a time period of 6.50×10^{-2} seconds. Calculate the acceleration of the electron.