25. A jetliner, traveling northward, is landing with a speed of 69m/s. Once the jet touches down, it has 750m of runway in which to reduce its speed to 601m/s. Compute the average acceleration (magnitude and direction) of the plane during landing.

27. A speed ramp at an airport is basically a large conveyor belt on which you can stand and be moved along. The belt of one ramp moves at a constant speed such that a person who stands still on it leaves the ramp 64 s after getting on. Clifford is in a real hurry, however, and skips the speed ramp. Staring from rest with an acceleration of 0.37m/s^2, he covers the same distance as the ramp does, but in one-fourth the time. What is the speed at which the belt of the ramp is moving?

45. A wrecking ball is hanging at rest from a crane when suddenly the cable breaks. The time it takes for the ball to fall halfway to the ground is 1.2 s. Find the time it takes for the ball to fall from rest all the way to the ground.

47. A ball is thrown straight upward and rises to a maximum height of 12.0m above its launch point. At what height above its launch point has the speed of the ball decreased to one-half of its initial value?

17. A car is traveling along a straight road with a velocity of +36 m/s when its engine cuts out. For the next twelve seconds the care slows down, and its average acceleration is a_1. For the next six seconds the car slows down further, and its average acceleration is a_2. The velocity of the car at the end of the eighteen-second period is +28 m/s. The ratio of the average acceleration values is $a_1/a_2=1.50$. Find the velocity of the car at the end of the initial twelve-second interval.

29. Suppose a car is traveling at 20.0 m/s, and the driver sees a traffic light turn red. After 0.530 s has elapsed (the reaction time), the driver applies the brakes, and the care decelerates at 7.00 m/s^2. What is the stopping distance of the care, as measured from the point where the driver first notices the red light?

30. A care is traveling at a constant speed of 33 m/s on a highway. At the instant this car passes an entrance ramp, a second car enters the highway from the ramp. The second car starts from rest and has a constant acceleration. What acceleration must it maintain, so that the two cars meet for the first time at the next exit, which is 2.5km away?

51. A log is floating on swiftly moving water. A stone is dropped from rest from a 75-m high bridge and lands on the log as it passes under the bridge. If the log moves with a constant speed of 5.0 m/s, what is the horizontal distance between the log and the bridge when the stone is released?

53. A cave explorer drops a stone from rest into a hole. The speed of sound is 343 m/s in air, and the sound of the stone striking the bottom is heard 1.50 s after the stone is dropped. How deep is the hole?