

**2. Acceleration**

For each of the following problems, calculate the acceleration, the initial or final speed or velocity) or the time taken, as necessary. Read each question carefully!

- a. A dragster accelerates from 0 to 90 m/s in 6.0 s. What is its acceleration?
- b. The driver of a truck applies the brakes and accelerates at a rate of  $-4.5 \text{ m/s}^2$  [E] until he stops. This takes 4.0s. What was the initial velocity of the truck?
- c. How long will it take a falling rock, accelerating at  $10 \text{ m/s}^2$ , to reach 112 m/s, if it starts from rest?
- d. A rocket accelerates at  $40 \text{ m/s}^2$  for 3.0 min. What is its change in velocity?
- e. A car accelerates from rest to 8.8 m/s in 3.0 s. What is its acceleration?