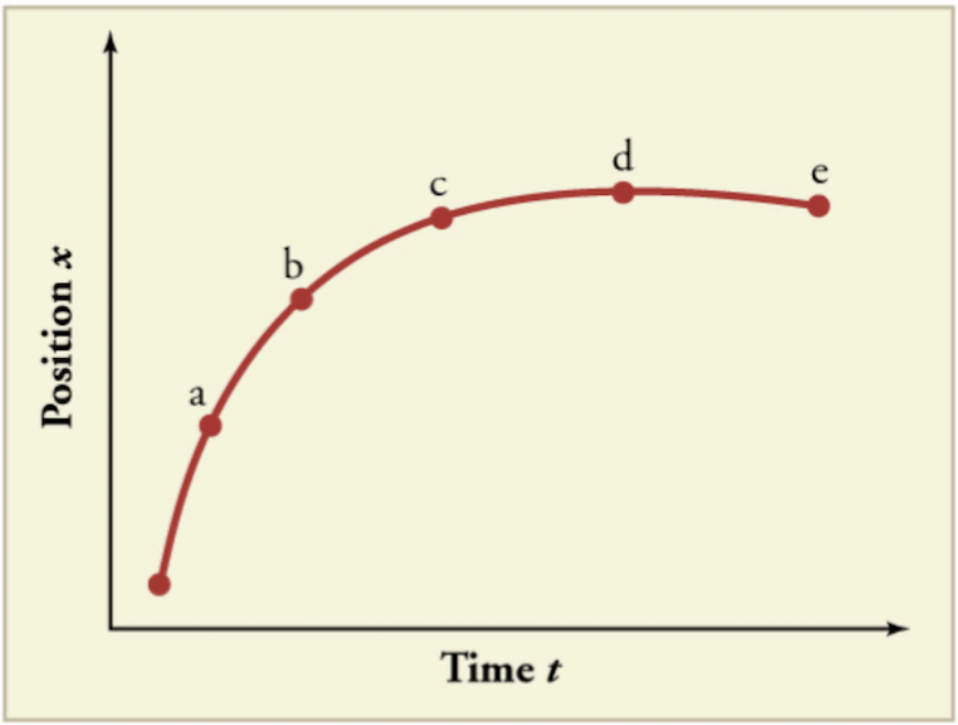
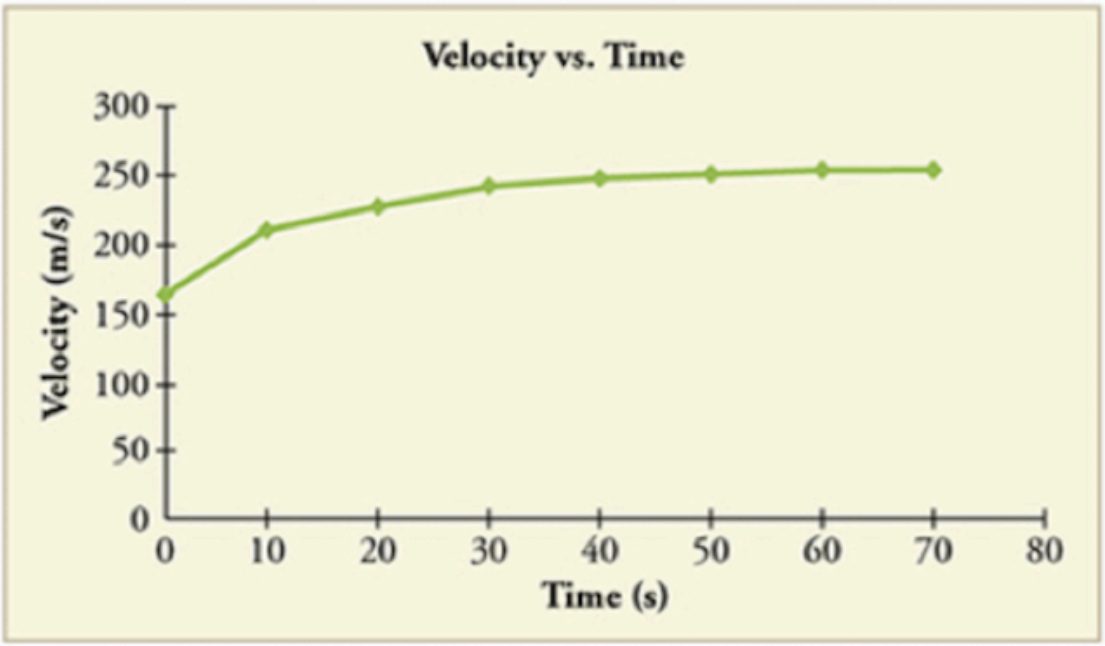
Graphing Worksheet

Practice

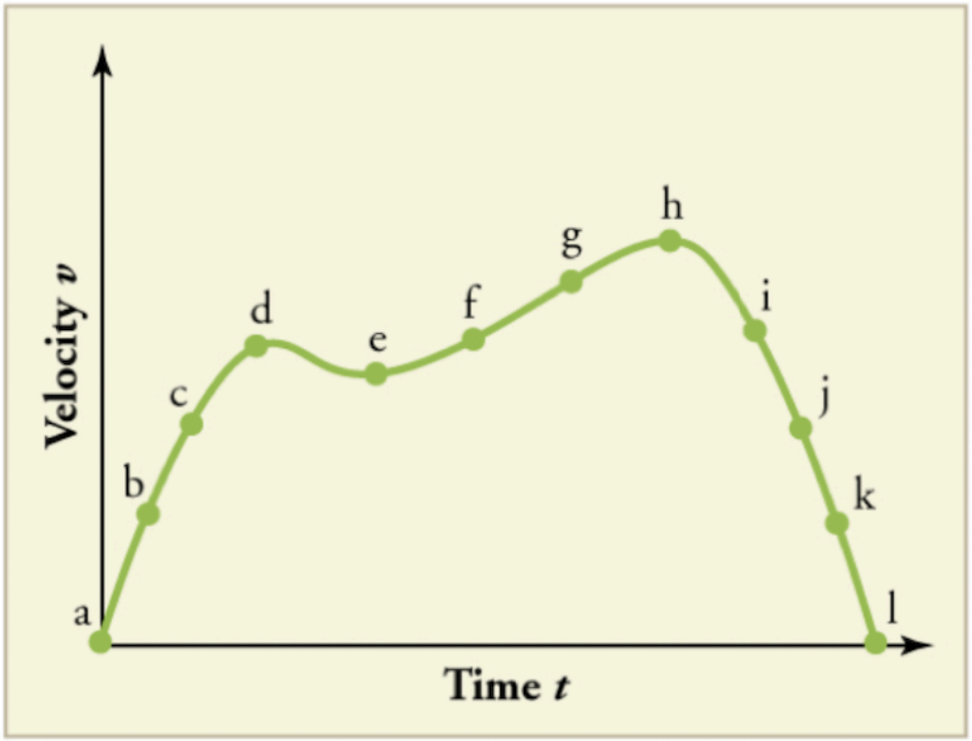
1. (a) Explain how you can use the graph of position versus time in Figure 2.52 to describe the change in velocity over time. Identify (b) the time (t_a, t_b, t_c, t_d or t_e) at which the instantaneous velocity is greatest, (c) the time at which it is zero, and (d) the time at which it is negative.



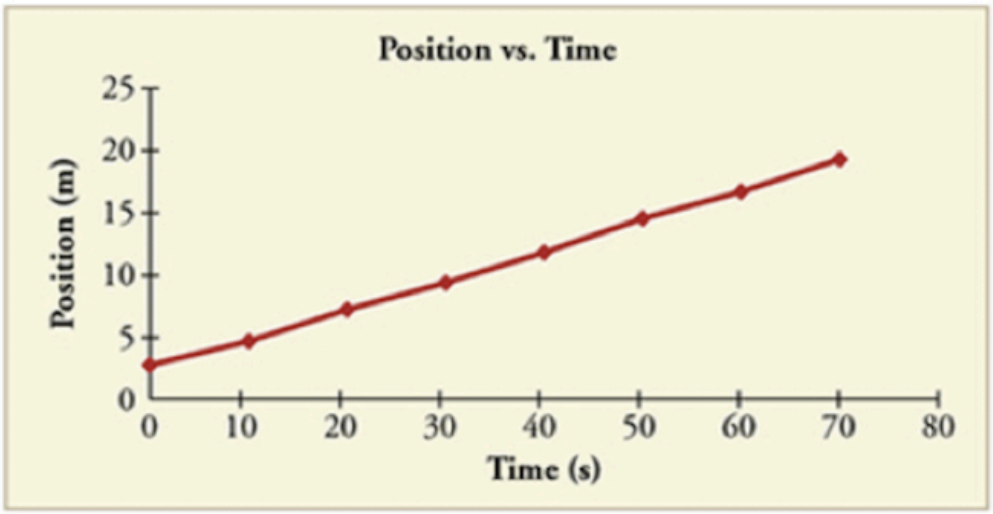
2. By taking the slope of the curve in Figure 2.61, verify that the acceleration is 3.2 m/s? at t = 10 s.



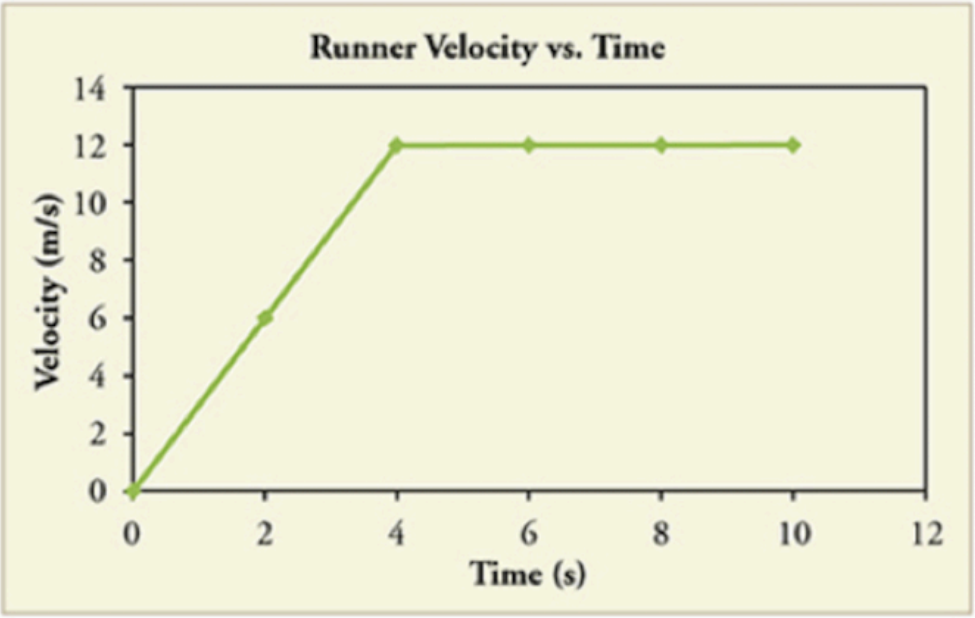
3. (a) Sketch a graph of acceleration versus time corresponding to the graph of velocity versus time given in Figure 2.55. (b) Identify the time or times (ta, tb, tc, etc.) at which the acceleration is greatest. (c) At which times is it zero? (d) At which times is it



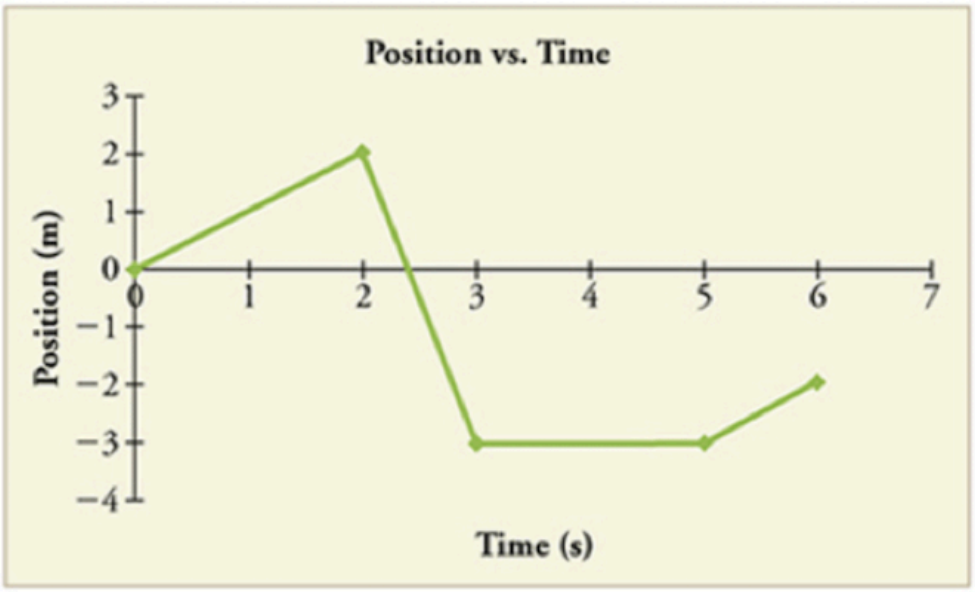
4. Using approximate values, calculate the slope of the curve in Figure 2.60 to verify that the velocity at t = 30.0 s is approximately 0.24 m/s. Assume all values are known to 2 significant



5. A graph of u(t) is shown for a world-class track sprinter in a 100-m race. (See Figure 2.65). (a) What is his average velocity for the first 4 s? (b) What is his instantaneous velocity at t = 5 s? (c) What is his average acceleration between 0 and 4 s? (d) What is his time for the race?



6. Figure 2.66 shows the position graph for a particle for 6 s. (a) Draw the corresponding Velocity vs. Time graph. (b) What is the acceleration between 0 s and 2 s? (c) What happens to the acceleration at exactly 2 s?



7. Solve for the total displacement of each pathway