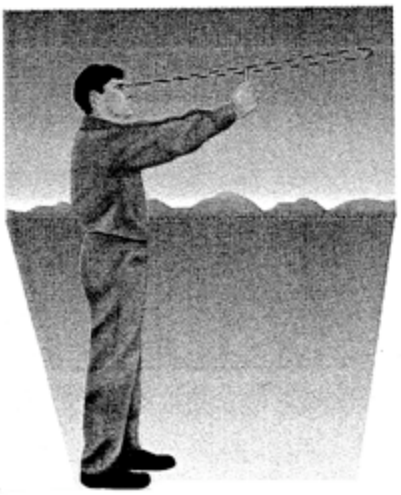
Chapter 1 Problems continues

41. Hold a pencil in front of your eye at a position where its end just blocks out the Moon (Fig. 1–12). Make appropriate measurements to estimate the diameter of the Moon, given that the Earth–Moon distance is 3.8×10^5 km.

FIGURE 1–12 Problem 41. How big is the Moon?



44. Noah's ark was ordered to be 300 cubits long, 50 cubits wide, and 30 cubits high. The cubit was a unit of measure equal to the length of a human forearm, elbow to the tip of the longest finger. Express the dimensions of Noah's ark in meters.

Chapter 2 Questions

1. Does a car speedometer measure speed, velocity, or both?
2. Can an object have a varying velocity if its speed is constant? If yes, give examples.
3. Can an object have a varying speed if its velocity is constant? If yes, give examples.

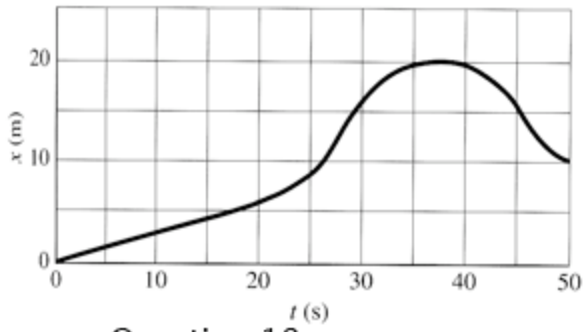
7. Compare the acceleration of a motorcycle that accelerates from 80 km/h to 90 km/h with the acceleration of a bicycle that accelerates from rest to 10 km/h in the same time.

9. Can an object have a northward velocity and a southward acceleration? Explain.

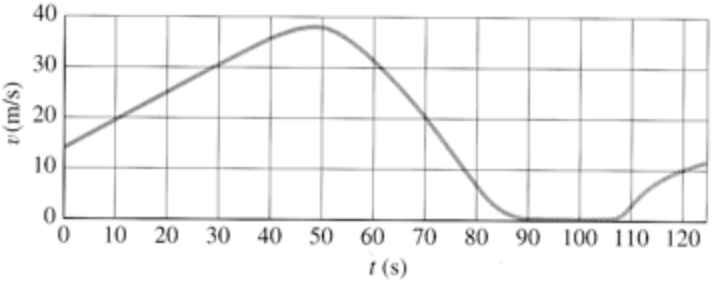
10. Can the velocity of an object be negative when its acceleration is positive? What about vice versa?
11. Give an example where both the velocity and acceleration are negative.
12. Is it possible for an object to have a negative acceleration while increasing in speed? If so, provide an example.

18. Describe in words the motion plotted in Fig. 2–26 in terms of v, a, etc. [*Hint*: First try to duplicate the motion plotted by walking or moving your hand.]
19. Describe in words the motion of the object graphed in Fig. 2–27.

Figure 2-27 and 26



Question 18



Question 19