General Physics

Chapter 1: Physics and Measurement

1.7 Significant Figures

1.) What is the importance of significant figures? What do they communicate?

2.) What are the rules for significant figures?

3.) Find the number of significant figures for each of the following:

a) 5.004 m

b) 0.0047 m

c) 6000 km

d) 200. cm

e) 4009 m

f) 0.002230 mm

g) 9 planets

h) 400.03 km

Chapter 2: Motion in One Dimension

2.1 Position, Velocity, and Speed

4.) Explain the *particle model*.

5.) Describe the relative nature of position.

6.) What is **displacement**? **Include the equation**.

7.) What is the difference between distance and displacement?

8.) Define a **vector quantity**.

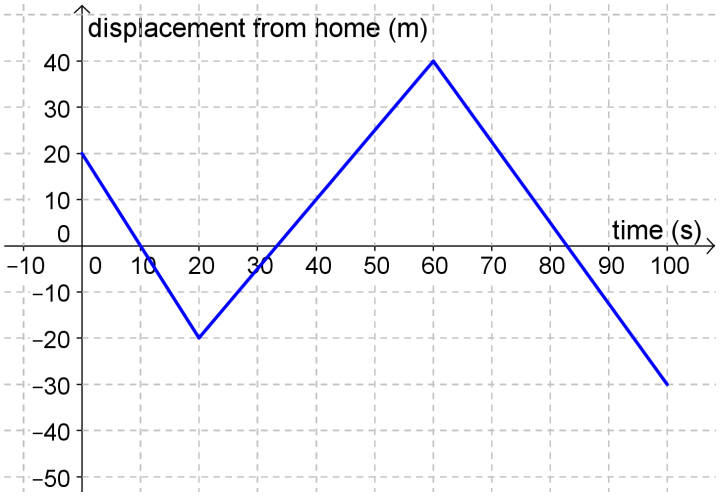
9.) Define a **scalar quantity**.

10.) Is displacement a vector or scalar quantity?

11.) What is (average) **velocity**? **Include the equation**. Is it a vector or scalar quantity?

12.) What is the equation for average speed? Is it a vector or scalar quantity?

13.) Use the graph to answer the following:



a) What is the displacement at time = 0 s?

b) What is the average velocity at time = 10 s? What is the average speed?

c) What occurred at time = 20 s?

d) What is the average velocity at time = 40 s? What is the average speed?

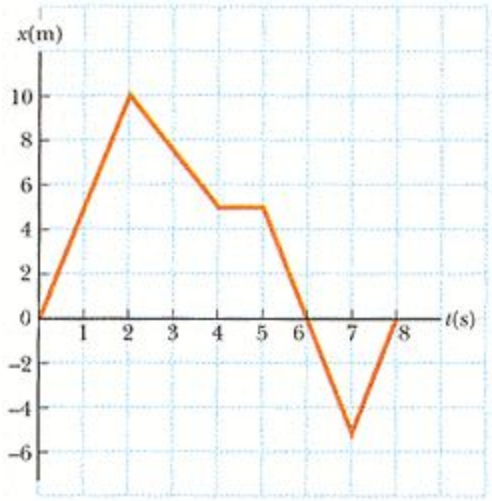
e) What is the average velocity at time = 60 s? What is the average speed?

f) What is the average velocity at time = 60 s? What is the average speed?

2.2 Instantaneous Speed and Velocity

14.) What does **instantaneous velocity** mean? Include the equation.

15.) Use the graph to answer the following.



a) What is the instantaneous velocity at time = 1 s? What is the average velocity at the same time?

b) What is the instantaneous velocity at time = 2 s?

c) What is the instantaneous velocity at time = 3 s?

d) What is the instantaneous velocity at time = 4.5 s? What is the average velocity at time = 4.5 s?

e) At what time(s) is the average velocity = 0 m/s?

f) At what time(s) is the instantaneous velocity = 0 m/s?