Motion Maps WS

t = 0 s   t = 1 s

0   1   2   3   4   5   6   7   8   9   x (m)
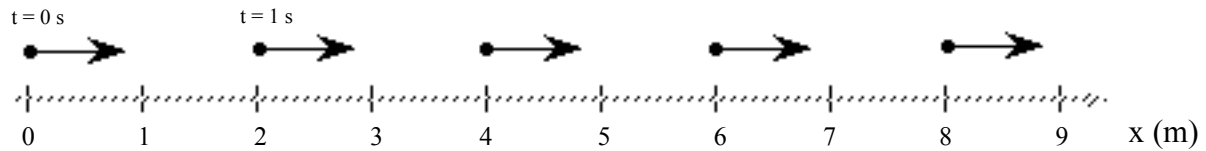
1. From the motion map above, answer the following:

   a. What can you conclude about the motion of the object?

   b. Draw a quantitative graphical representation of **x** vs **t** (see below).

   c. Draw a quantitative graphical representation of **v** vs **t** (see below).

   x   **v**

                                                                          t
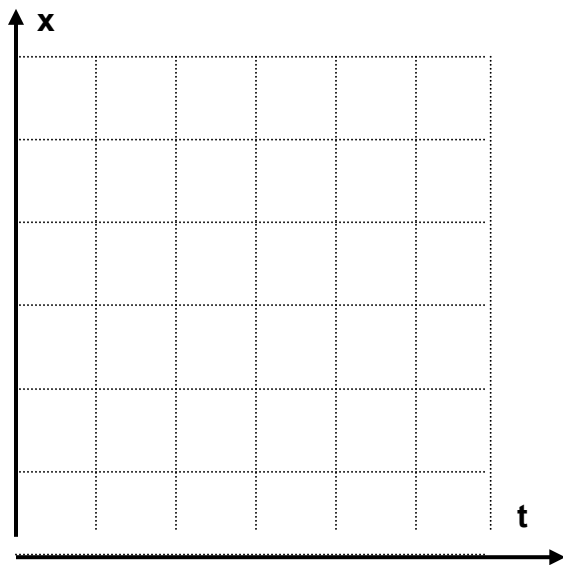
   t

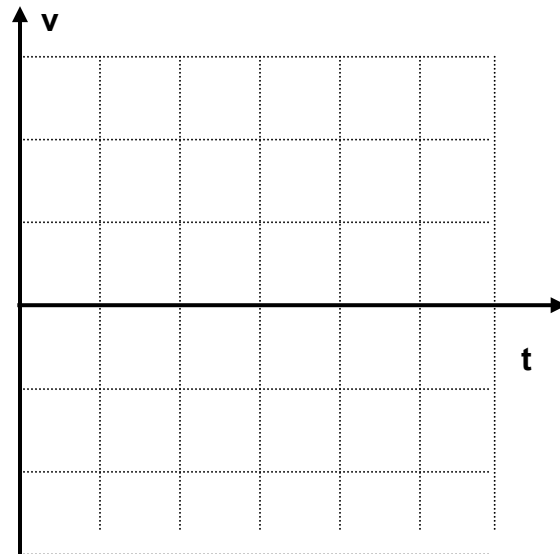   fig. 1   fig. 2

   d. Write a mathematical expression (equation) that represents the relationship between **x** and **t**, from fig. 1.

   e. Write a mathematical expression (equation) that represents the relationship between **v** and **t**, from fig. 2.

   f. Describe what the area under the curve in fig. 2 represents. Cross hatch (shade) this area.

2. From the position vs time data below, answer the following questions.

t (s)	x (m)
0	0
1	2
2	4
3	4
4	7
5	10
6	10
7	10
8	5
9	0

a. Construct a graph of position vs time.

b. Construct a graph of velocity vs time.

(A)

(B)
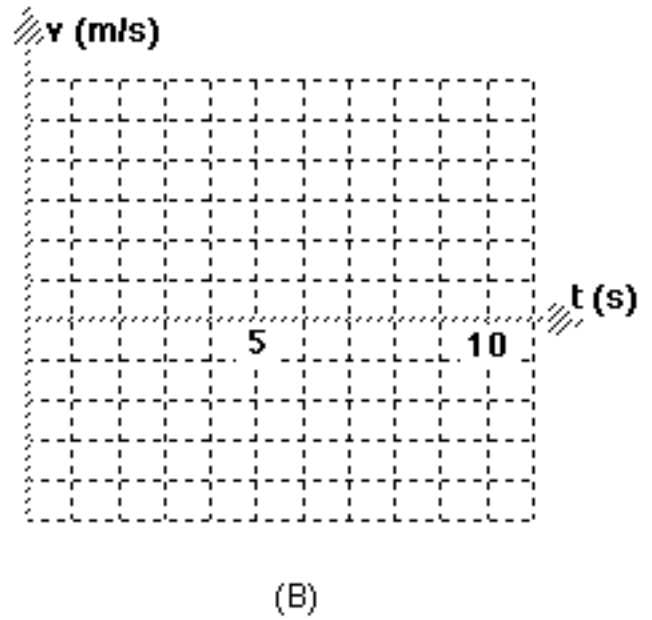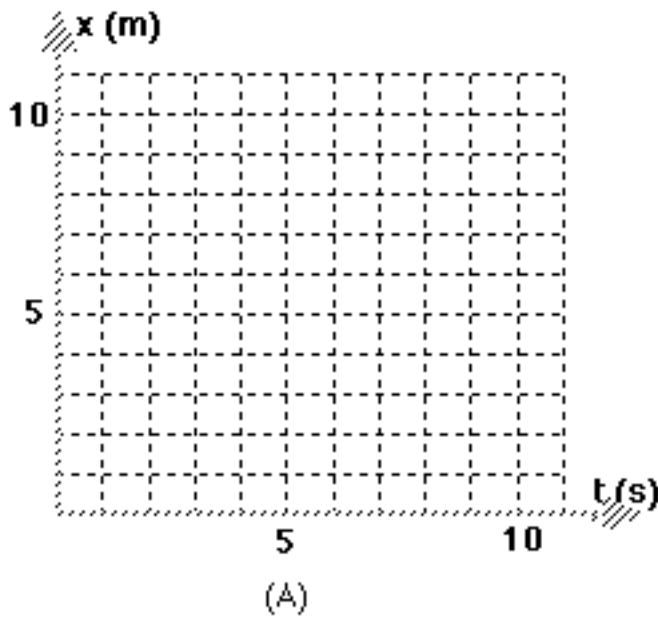
c. Draw a motion map for the object.

d. Determine the displacement from t = 3.0s to 5.0s using graph B.

e. Determine the displacement from t = 7.0 s to 9.0 s using graph B.