

Graphing Practise

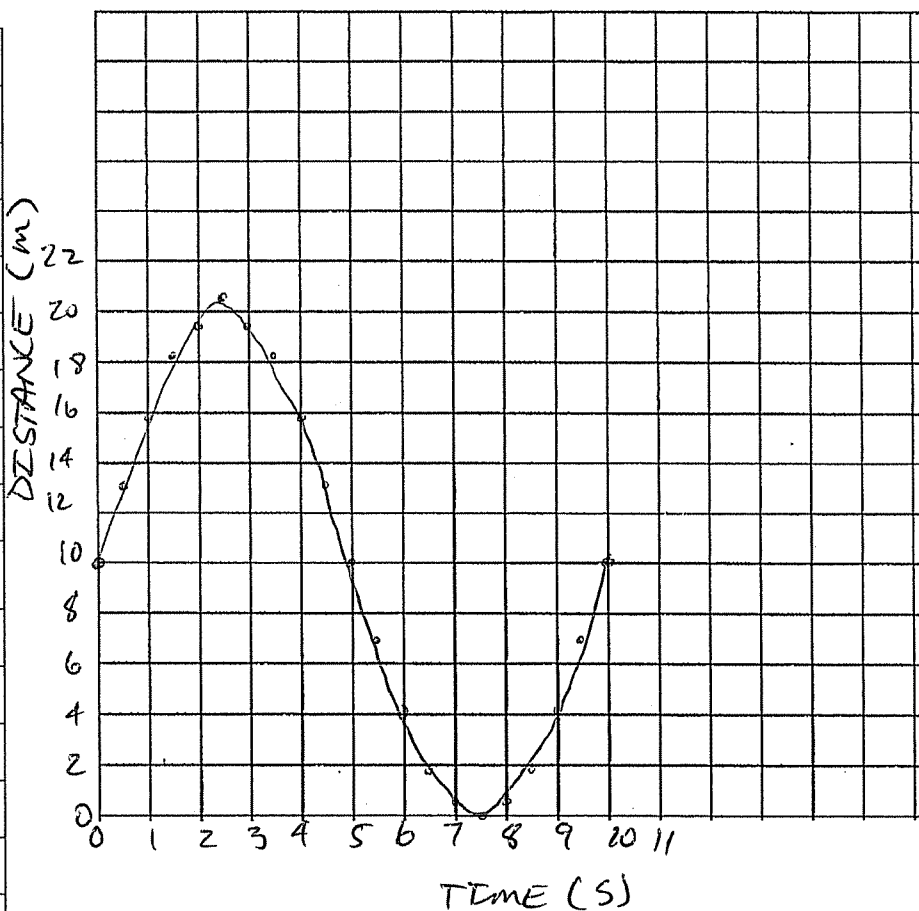
Name - KEY

1.) Plot the data displayed below, determine the following:

- a) average velocity for first 2.5 sec
- b) average velocity from 2.5 to 7.5 sec
- c) velocity at exactly 2.5 sec

DISTANCE VS. TIME

Time (s)	Distance (m)
0	10
0.5	13.1
1.0	15.9
1.5	18.1
2.0	19.5
2.5	20.5
3.0	19.5
3.5	18.1
4.0	15.9
4.5	13.1
5.0	10.0
5.5	6.9
6.0	4.1
6.5	1.9
7.0	0.5
7.5	0
8.0	0.5
8.5	1.9
9.0	4.1
9.5	6.9
10	10

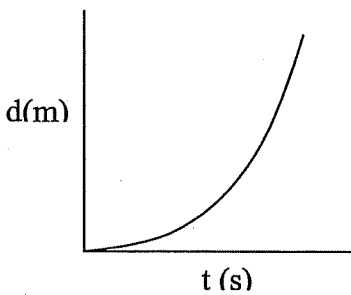
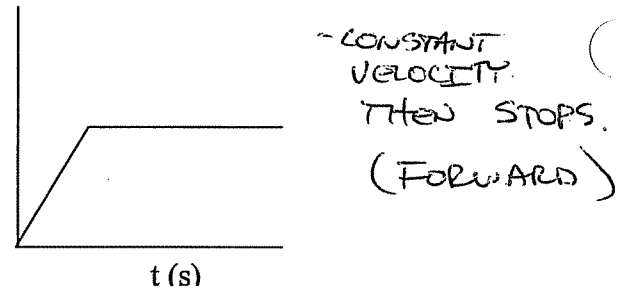
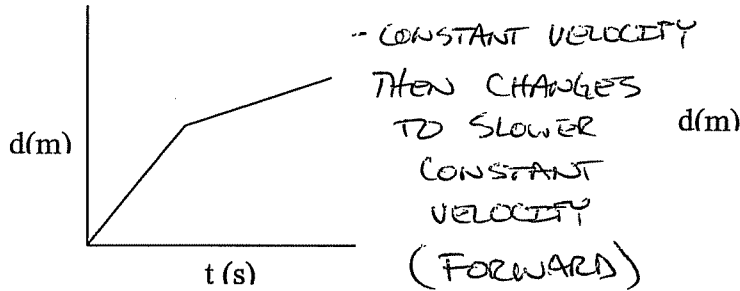


A.) $m = \frac{y_2 - y_1}{x_2 - x_1} \quad / \quad m = \frac{20.5 - 10.0}{2.5 - 0} \quad / \quad m = \frac{10.5}{2.5} \quad / \quad m = 4.2 \text{ m/s}$

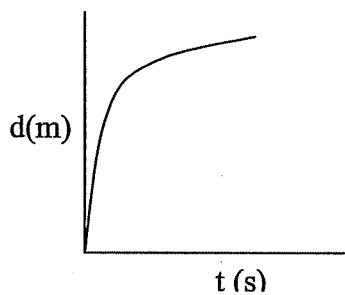
B.) $m = \frac{y_2 - y_1}{x_2 - x_1} \quad / \quad m = \frac{0 - 20.5}{7.5 - 2.5} \quad / \quad \frac{-20.5}{5.0} \quad / \quad m = -4.1 \text{ m/s}$

C.) ZERO = SLOPE IS HORIZONTAL.

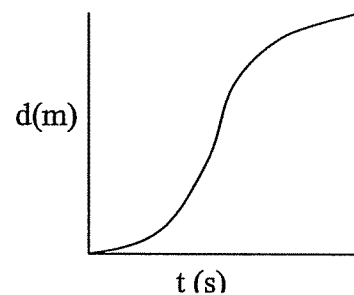
2.) Describe the motion of the object in the graphs below.



- ACCELERATING FORWARD

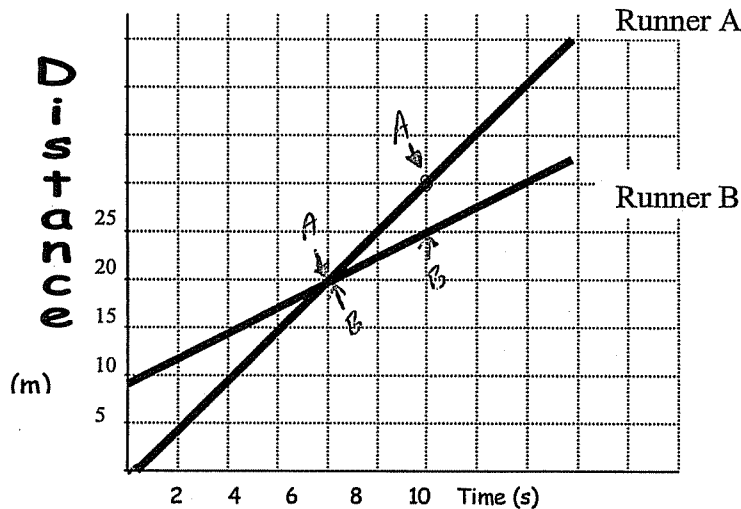


- DECELERATING FORWARD



- ACCELERATING FORWARD FOR $\frac{1}{2}$ TIME THEN DECELERATING FORWARD FOR $\frac{1}{2}$ TIME.

3.) Use the graph below to determine the following:



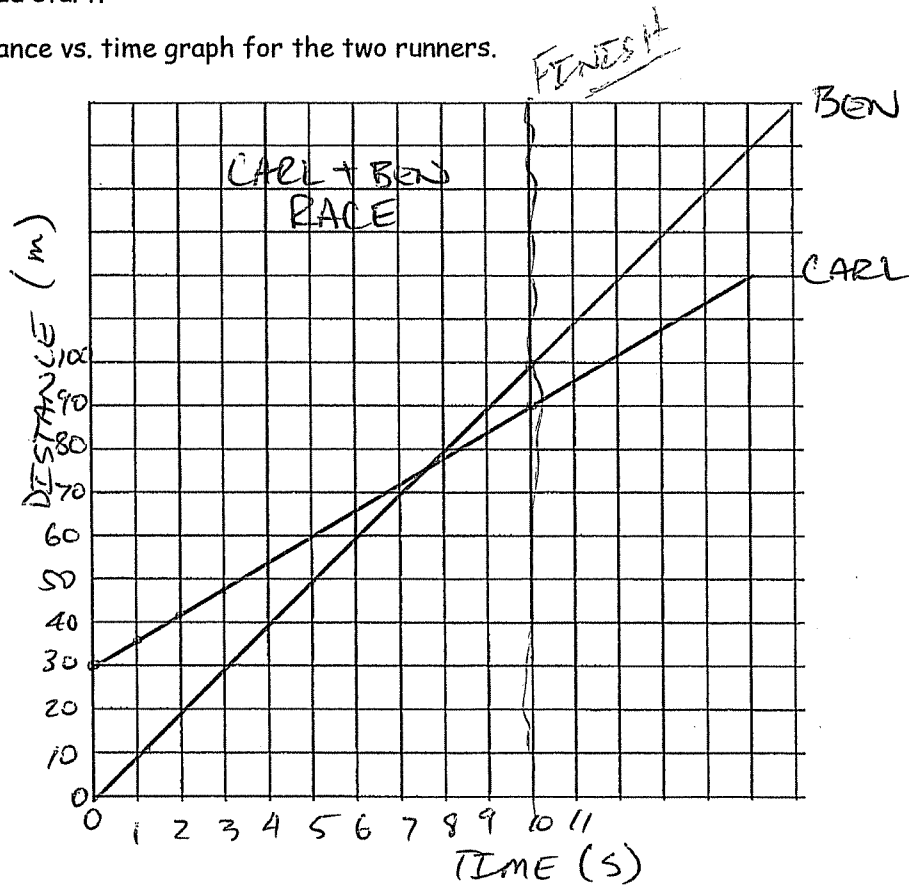
- a) Velocity of runners A and B. (A) $\text{SLOPE A} = \frac{30-20}{10-7} / m = \frac{10}{3} / m = 3.\bar{3} \text{ m/s}$
 b) Distance head start of runner B. $\text{SLOPE B} = \frac{25-20}{10-7} / m = \frac{5}{3} / m = 1.\bar{6} \text{ m/s}$

c) Time and distance when A passes B. (B) 9 m

(C) PASSED AT 20m AND 7s.

4.) Ben and Carl both run a 100 m dash. Ben runs at 10.0 m/s and Carl can only run at 6.0 m/s. Ben gives Carl a 30.0 m head start.

a) Draw a distance vs. time graph for the two runners.



b) Who wins based on your graph?

BEN BY 10 m.

c) What head start would result in a tie?

40 m HEAD START.

