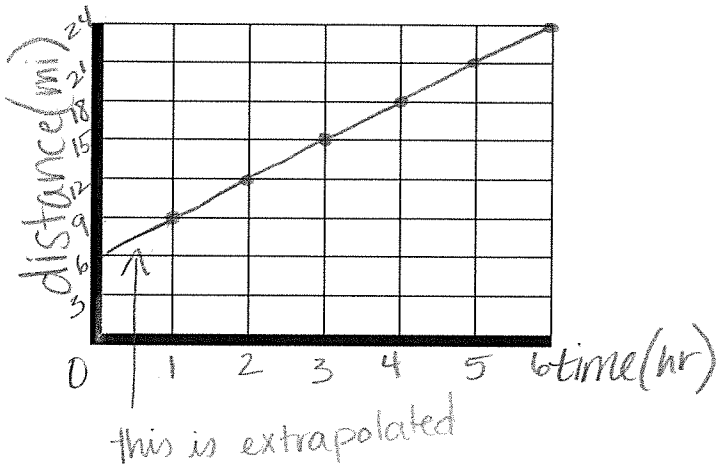
Name Key

Date:

Motion Graphs

Data set 1

Time (Hours)	Distance (miles)
1	9
2	12
3	15
4	18
5	21
6	24



Explain the motion of the object in words:

Fast motion in + direction for 1 sec
Constant slower speed from 1-6 sec

Questions

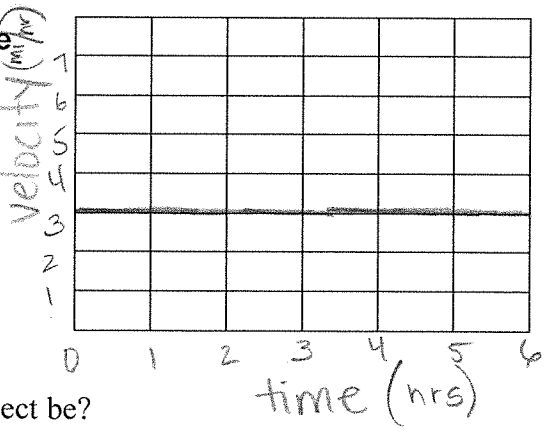
a. Where did the object start?

1 hr @ 9 miles, 0 hr @ 6 miles

b. How fast is the object going? In what direction?

9 m/s +, then 3 m/s +

Create a Velocity vs time graph from the information above



or you could make it like we had in the slides

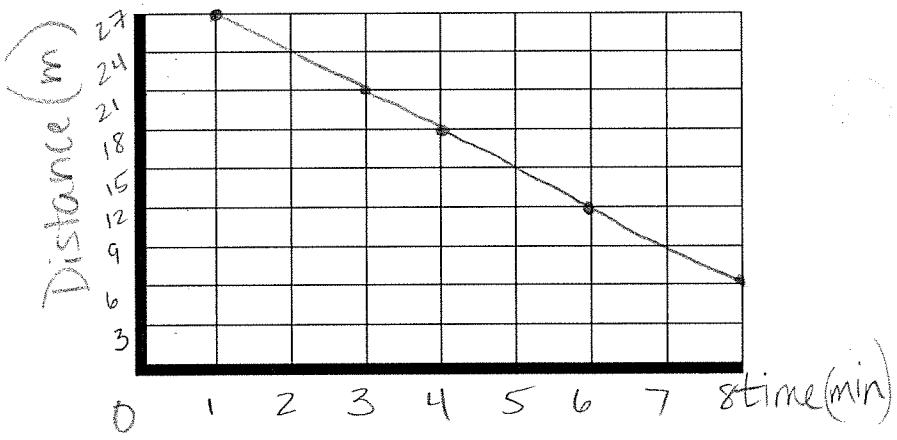
c. After 10 hours of travel where would the object be?

$d = (10\text{hr})(3\text{mi/hr})$

$= 30\text{mi}$

Data set 2

Time (min.)	Distance (meters)
1	27
3	21
4	18
6	12
8	6



Explain the motion of the object in words:

Object is moving @ a constant speed in the opposite direction

Questions

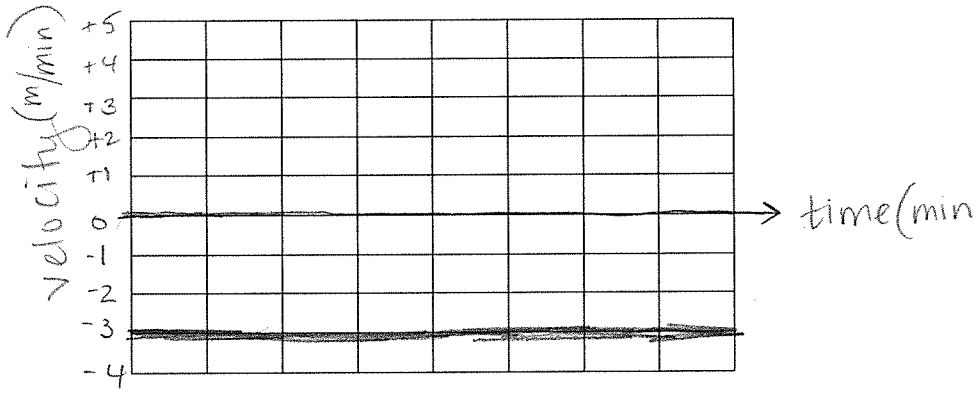
a. Where did the object start?

30m

b. How fast is the object going? In what direction?

$\frac{-6}{2} = -3\ m/min$

Create a velocity vs time graph from the information above



c. After 10 min. of travel where would the object be?

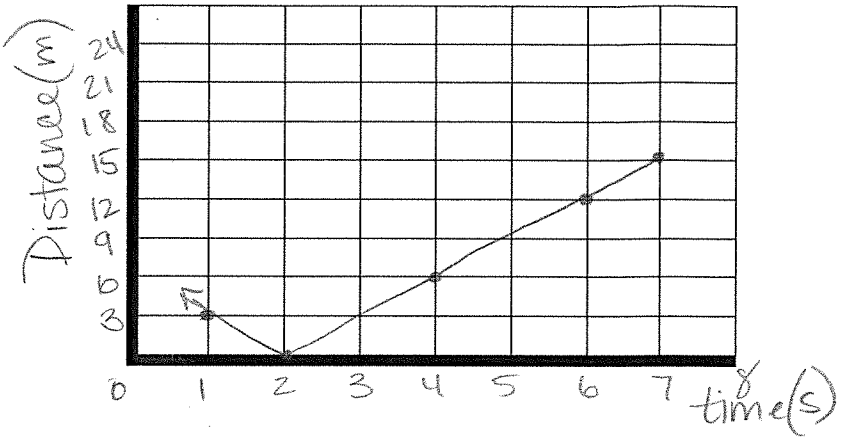
$d = vt$

$= (-3)(10min)$

$= -30\ m$ position

Data set 3

Time (Seconds)	Distance (meters)
1	3
2	0
4	6
6	12
7	15



Explain the motion of the object in words:

constant speed in negative, turns around, constant speed in positive for 5 sec

Questions

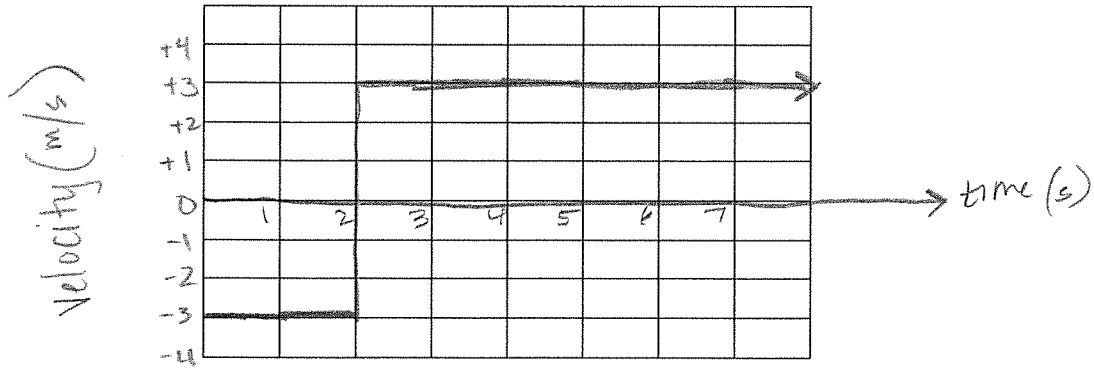
a. Where did the object start?

probably 6m (extrapolated)

b. How fast is the object going? In what direction?

3 m/s, first in neg direction then in positive direction

Create a velocity vs time graph from the information above

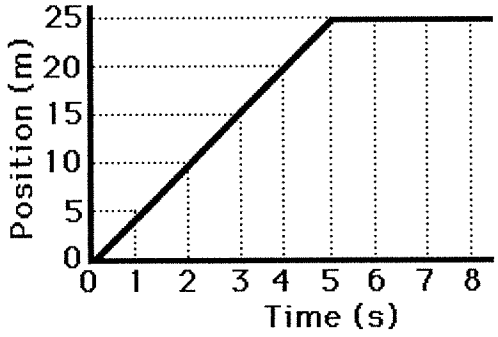


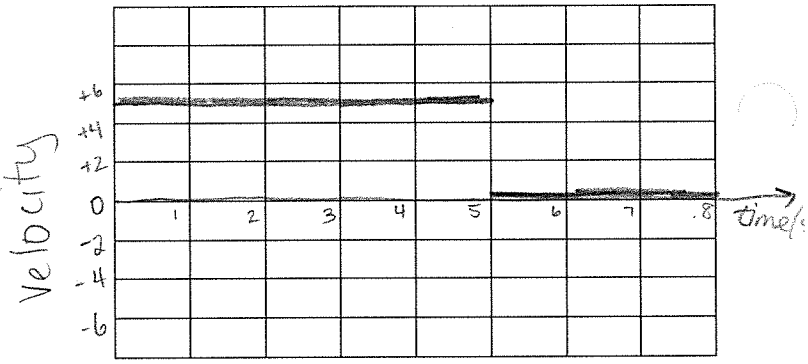
c. After 10 seconds of travel where would the object be?

$d = vt$

$= (3\text{ m/s})(10) = 30\text{ m}$

Using the d vs. t graph, create a v vs. t graph.

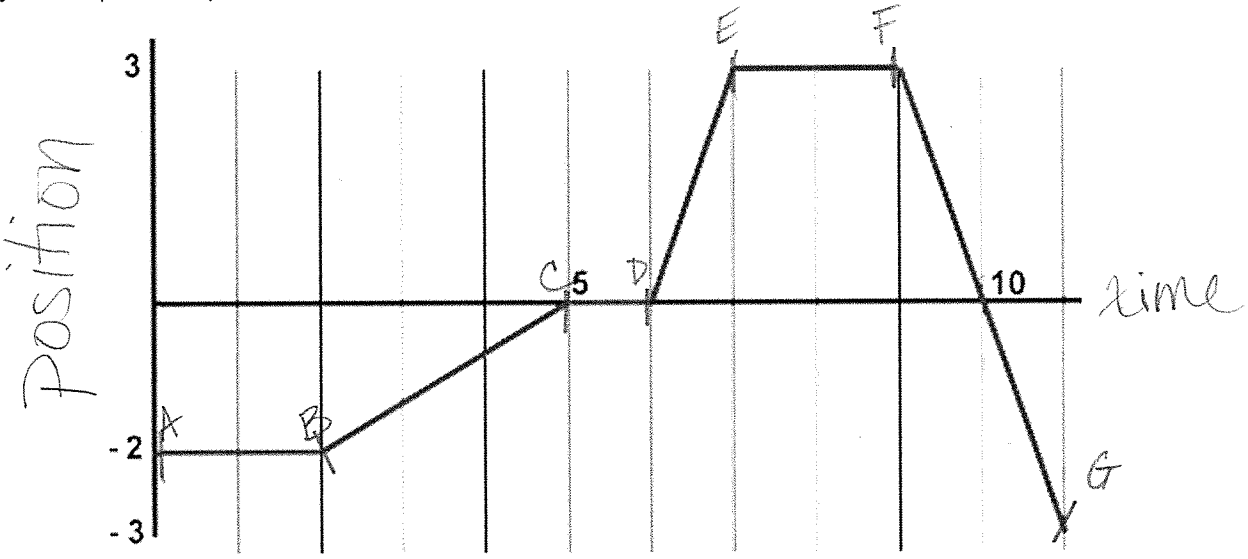




Explain the motion of this object in words:

constant positive velocity for 5 sec, then stationary for 3sec

The y-axis represents position in meters and the x-axis represents time in seconds.



During which intervals was he traveling in a positive direction? BC, DE

During which intervals was he traveling in a negative direction? FG

During which interval was he resting in a negative location? AB

During which interval was he resting in a positive location? EF

During which two intervals did he travel at the same speed? DE & FG

During which interval was he traveling the fastest? DE (positive) FG (negative)

During which interval was he traveling his slowest but was still moving? BC