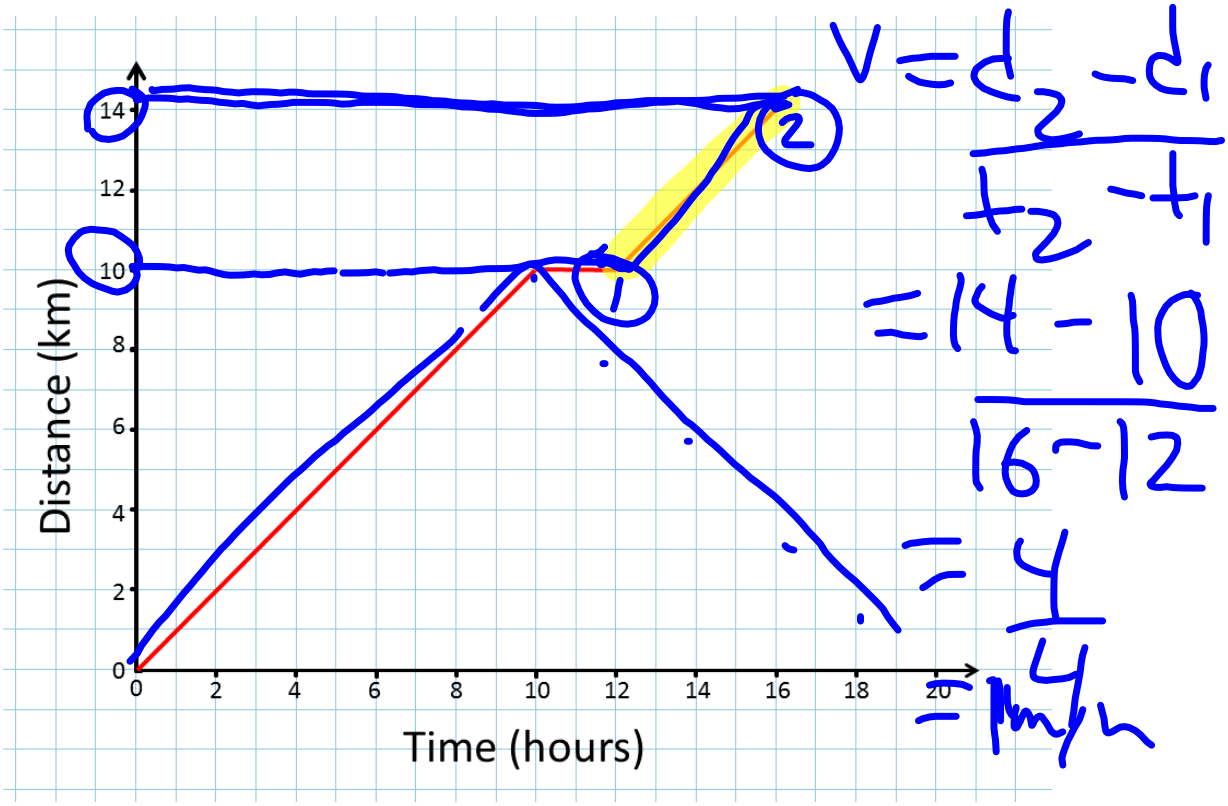
Nov 20, 2019

Graphing Velocity cont

Test next Tuesday!!!

Warm-Up

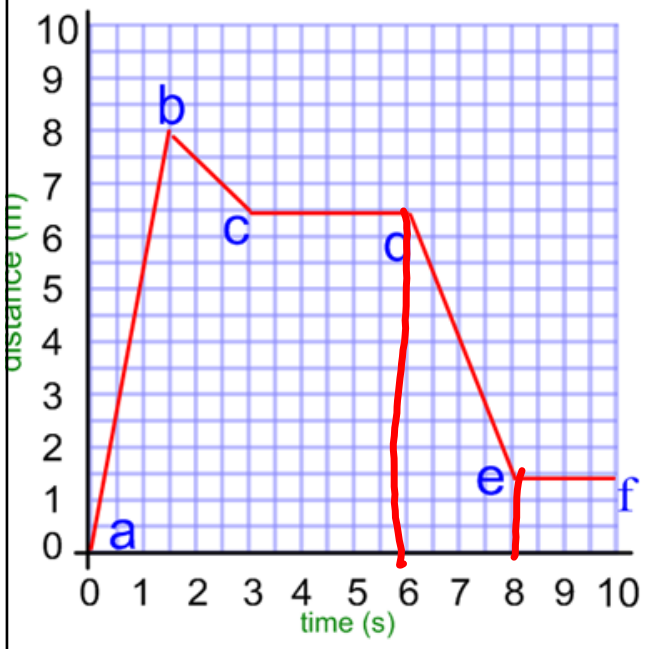
1. Calculate the speed from 12s to 16s



$$v = \frac{d_2 - d_1}{t_2 - t_1} = \frac{14 - 10}{16 - 12} = \frac{4}{4} = 1 \text{ km/h}$$

Science 10
Distance Time Graphs
All answers can be placed on this sheet ☺

1. Using the following graph, answer the questions below



a) What is the average speed between:

i) a and b

$v = \frac{d_2 - d_1}{t_2 - t_1} = \frac{8m - 0\ m}{1.5s - 0\ s} = \frac{8\ m}{1.5s} = 5.33\ m/s$

ii) b and c

$v = \frac{d_2 - d_1}{t_2 - t_1} = \frac{6.5m - 8m}{3s - 1.5s} = \frac{-1.5m}{1.5s} = -1\ m/s$

iii) c and d

v = 0m/s

iv) d and e

$v = \frac{d_2 - d_1}{t_2 - t_1} = \frac{1.5m - 6.5m}{8s - 6s} = \frac{-5m}{2s} = -2.5m/s$

v) e and f

0m/s

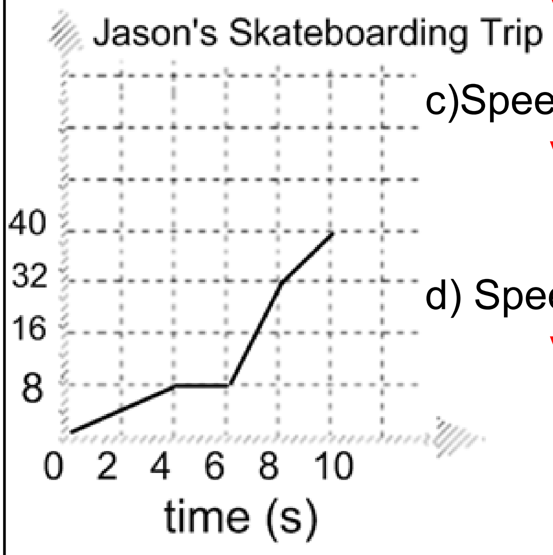
2. The following graph depicts Jason's trip to school. Using the information given in the graph answer the following questions:

a) How far did Jason travel on his trip to school?

40m

b) Speed between 0 s and 4s?

$$v = \frac{d_2 - d_1}{t_2 - t_1} = \frac{8m - 0\ m}{4\ s - 0s} = \frac{8m}{4s} = 2m/s$$



c)Speed between 4s and 6s?

$$v = \frac{d_2 - d_1}{t_2 - t_1} = \frac{8m - 8m}{6s - 4s} = \frac{0\ m}{2s} = 0m/s$$

d) Speed between 6s and 8s?

$$v = \frac{d_2 - d_1}{t_2 - t_1} = \frac{32m - 8m}{8s - 6s} = \frac{24m}{2s} = 12m/s$$

Plotting a Graph

When asked to plot a graph you will be given a 1)**data table** or 2) **information so you can fill in a data table**

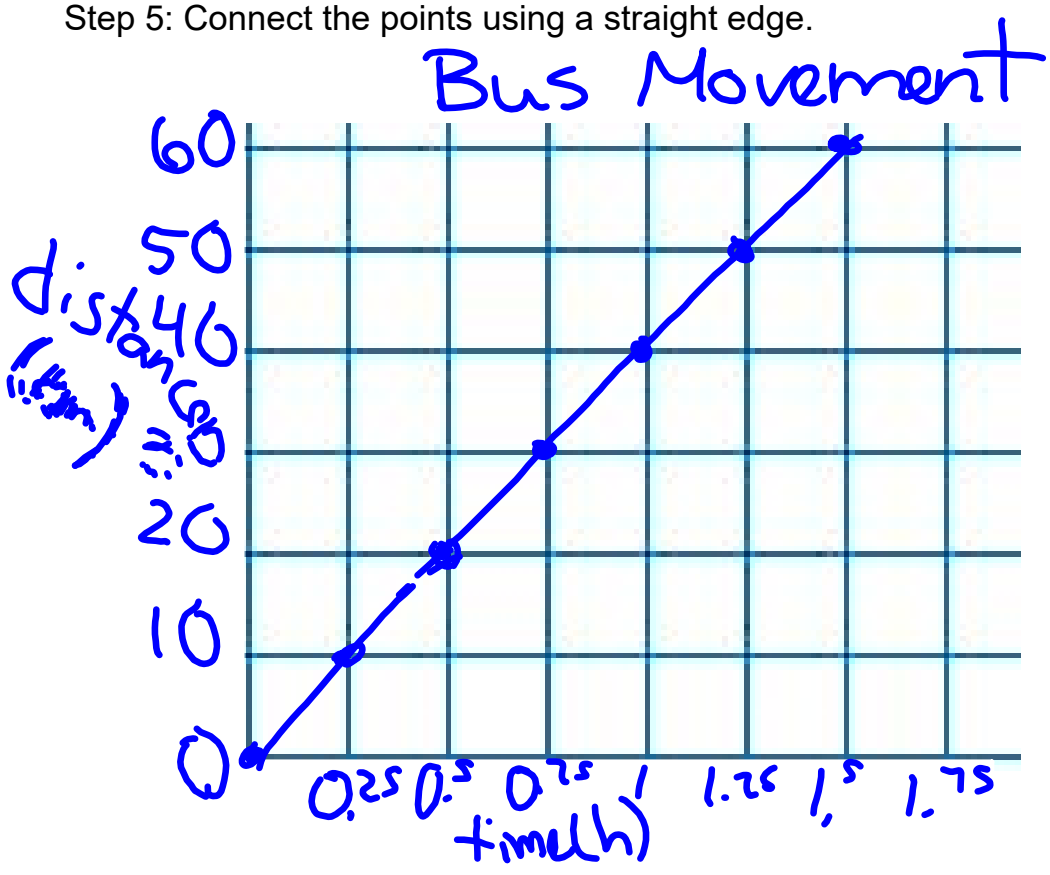
Bus Movement

Time (h)	Distance (km)
0	0
0.25	10
0.5	20
0.75	30
1	40
1.25	50
1.5	60

1) Plotting Using a Data Table

When asked to plot a graph and you are given the data table. You can graph this one of two ways.
a) You can use pen and paper
b) You can create a graph using excel.
We will practice both methods. Keeping in mind for a test or the exam you will have to use the pen and paper method.

a) Step 1: Label your graph (x axis, y axis and graph title)
Step 2: Decide on scale
Step 3: Place numbers on x and y axis
Step 4: Plot the points from the data table
Step 5: Connect the points using a straight edge.



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2) Information so you can fill in the table

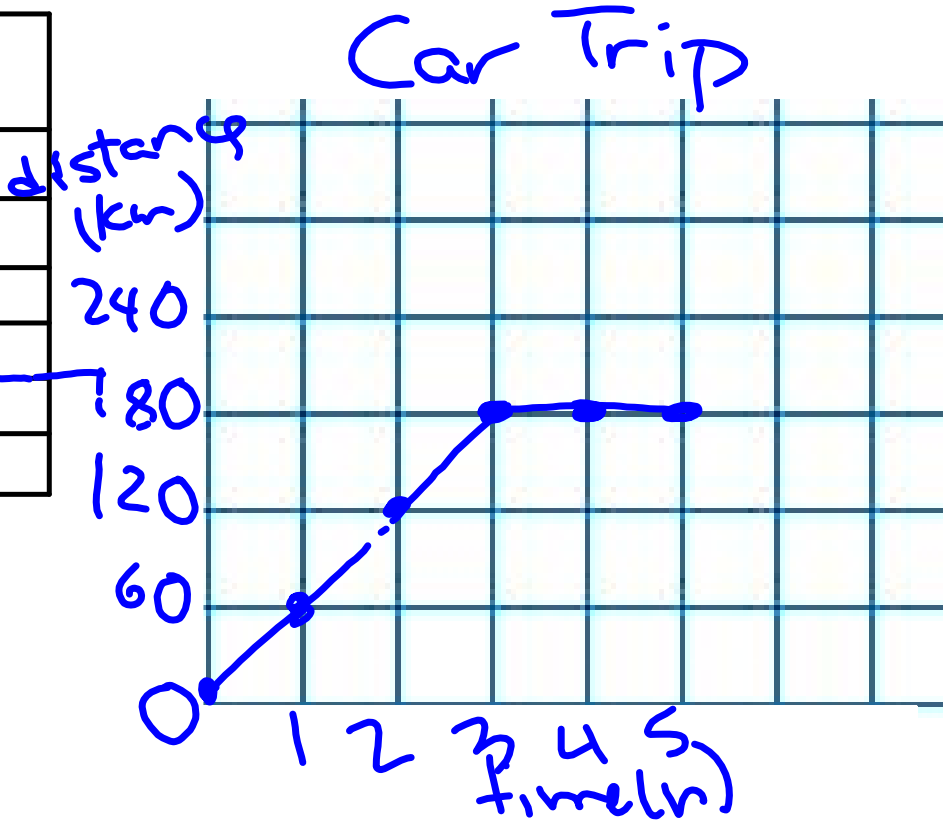
A car travels at a constant speed of 60km/h for 3 hours and then stops for 2 hours.

- Complete the given table showing the distance travelled at each second

(you will need to calculate d=vt for each time interval

- sketch the distance time graph (either using pen and paper or excel, we will model both methods)

Distance (km)	Time (h)
0	0
60	1
120	2
180	3
180	4
180	5



Graphing WS

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Attachments

average speed ex 1.notebook

average speed ex 2 answers.notebook