Essentials Mathematics
Major Test 2.9

60
~~65~~

Topics – Time, Distance Time Graphs, Maps and Networks
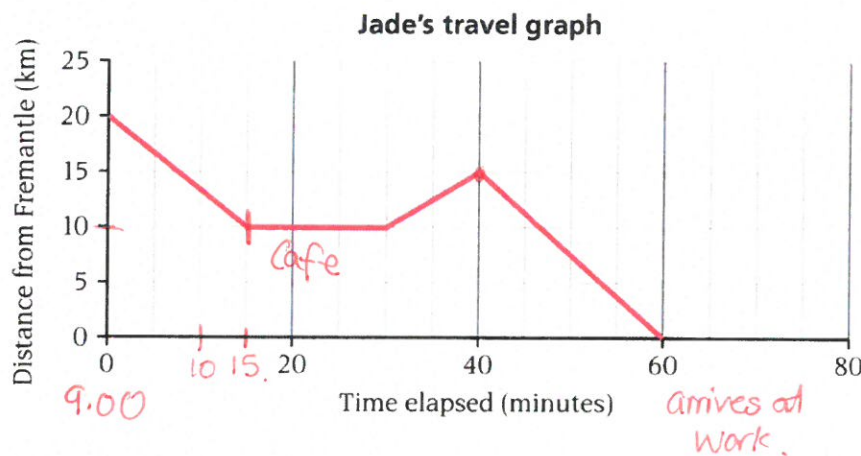
Baldivis
Secondary College

Name	

- **Attempt all questions**
- **Show all working and calculations where possible**
- **Calculators are allowed**
- **One A4 page of notes is allowed**

- *You must include all working out to receive full marks*

Question 1 (5 marks: 1, 1, 1, 1, 1)

Jade travels from her home to Fremantle to go to work. The graph shows the distance Jade was from Fremantle as she travelled to work on Friday. Jade left home at 9:00 am to drive to Fremantle. She stopped at a café for a quick breakfast with her friend Aden. After breakfast, Jade dropped Aden back at his house before she continued her journey to work.

Jade's travel graph

a) What was Jade's average speed on the way to the café in km/h?   10km in 15min ✓
40km in 60min ✓

b) How long did Jade and Aden take to have breakfast?

15 min ✓

c) At what time did they leave the café?

9.30am ~~Ndm~~ ✓

d) How far does Aden live from the café?   10km ✓

e) After dropping off Aden, what was Jade's average speed on the way to Fremantle in km/h?
15km in 20min ✓
45km in 60min ✓

Question 2 (7 marks: 2, 2, 1, 2)

b) Is it possible to travel all the paths in the network without retracing or missing paths? If so, give the route you use, if not, explain why not.

Not possible to travel
- more than 2 odd vertices
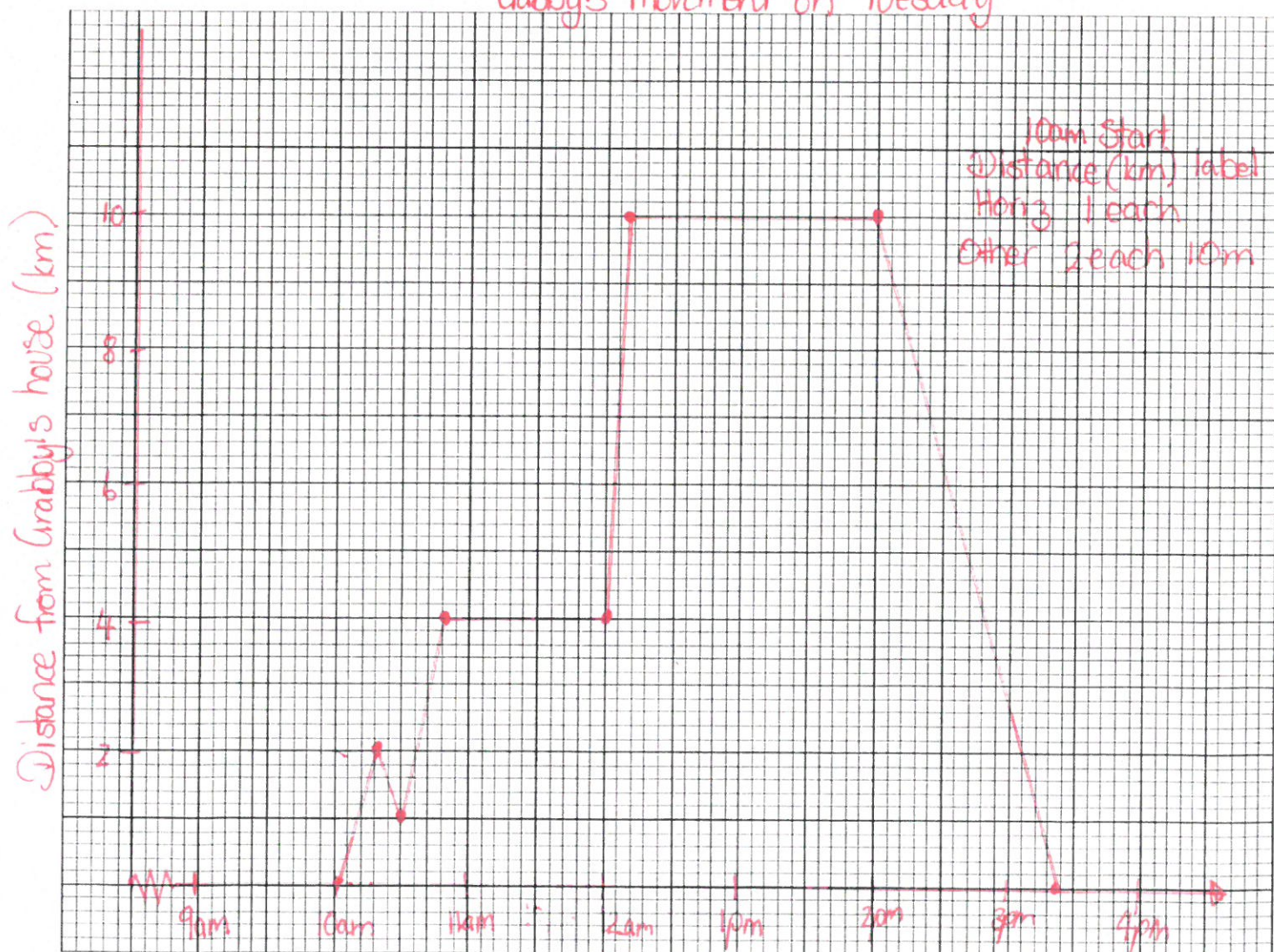
Question 4   (15 marks)

You are to draw a travel graph on the following set of axes to represent the movements of Gabby last Tuesday.

Gabby left home at 10am, walking to her friend's house. Twenty minutes after starting, 2km from home, she realized she had left her phone at home, so turned around to go back to get it. She walked at the same pace for 10 minutes until her phone rang in her pocket!!!!!!!!! She turned around again, heading for her friend's house. She jogged the 3km in 20 minutes.

Gabby needed a drink and a good sit down after all that effort, so she and Halle made banana smoothies, drank and chatted. At noon, Halle's Mum drove them the 6km out of town to the court for basketball training. They only took 10 minutes to get there.

Halle's Mum picked them up at 3pm, driving Gabby straight home. The drive took 20 minutes in the afternoon rush.

Gabby's movement on Tuesday

10am Start
Distance (km) label
Horiz 1 each
Other 2 each 10m

Question 6 (14 marks)   WA police provided the information below.

http://www.police.wa.gov.au/Default.aspx?TabId=1073&mid=1611&SkinSrc=[G]Skins

/WAPoliceHome/WAPoliceHome&ContainerSrc=[G]Containers/PrintVersionContainer/M

yPrintContainer&dnnprintmode=true

Crash statistics

Provided for your information and to raise awareness in our community to the waste of our most valuable resource.

Fatalities (year to date) - as at 11:59pm, 21 October 2015

Year	Metro	Country	Total
2015	58	70	128
2014	71	77	148
2013	67	59	126
2012	69	77	146

Critical Injuries (year to date) - as at 11:59pm, 21 October 2015

Year	Metro	Country	Total
2015	71	67	138
2014	116	82	198
2013	91	70	161
2012	72	86	158

a)   From the data given, which year had the lowest number of fatalities?

Lowest falalities 2013 (126)

b)   For 2015 so far, what percentage of fatalities have been on country roads?

$\frac{70}{128} \times 100 = 54.69\%$

c)   For 2015 so far, what percentage of critical injuries have been on country roads?

$\frac{67}{138} \times 100 = 48.86\%$