



Lite GCSE Maths

Time Problem Solving

Name: _____

Class: _____

Author:

Date:

Time: 35

Marks: 30

Comments:

Q1. Below is the calendar for the first two months of 2008.

January 2008							February 2008						
M	T	W	T	F	S	S	M	T	W	T	F	S	S
	1	2	3	4	5	6				1	2	3	
7	8	9	10	11	12	13	4	5	6	7	8	9	10
14	15	16	17	18	19	20	11	12	13	14	15	16	17
21	22	23	24	25	26	27	18	19	20	21	22	23	24
28	29	30	31				25	26	27	28	29		

Three friends Tom, Dick and Harry were all 16 this year.
 Tom had a birthday in February.
 Dick and Harry had birthdays in January.
 Dick is exactly 7 weeks older than Tom.
 Dick is 10 days younger than Harry.

When are their birthdays?

.....

.....

.....

Answer Tom

Dick

Harry

(Total 2 marks)

Q2. After exercise you can work out your fitness index, F .

You need to know

your exercise time in seconds (T)

the number of your pulse beats in three 30 second intervals after you have stopped exercising (a , b and c).

Terry is working out his fitness index.

(a) (i) Terry exercises for 3 minutes 30 seconds.

Work out T

.....

Answer seconds

(1)

(ii) After exercise he obtains $a = 70$, $b = 55$ and $c = 45$

Work out $a + b + c$.

.....

Answer pulse beats

(1)

(iii) Work out F , Terry's fitness index, using the formula

$$F = \frac{50T}{a+b+c}$$

.....

.....

Answer seconds

(2)

(b) Your fitness grade can be worked out from your fitness index, F , using this table.

Fitness index, F	less than 50	50 to 59	60 to 69	70 to 79	80 to 89	≥ 90
Fitness grade	Very poor	Poor	Fair	Good	Excellent	Superb

What is Terry's fitness grade?

.....

Answer

(1)

(Total 5 marks)

Q3. A website shows ticket information for trains from London to Brighton.

Key means that a ticket can be bought at the price shown.

Ticket	Depart	11:26	11:36	11:41	11:56	12:06
	Arrive	12:24	12:27	12:49	12:54	12:58
Advance £16.40		<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	
Off-peak £19.00		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anytime £28.50		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

(a) What is the cost of the cheapest ticket that can be bought for the 11:36 train?

Answer £

(1)

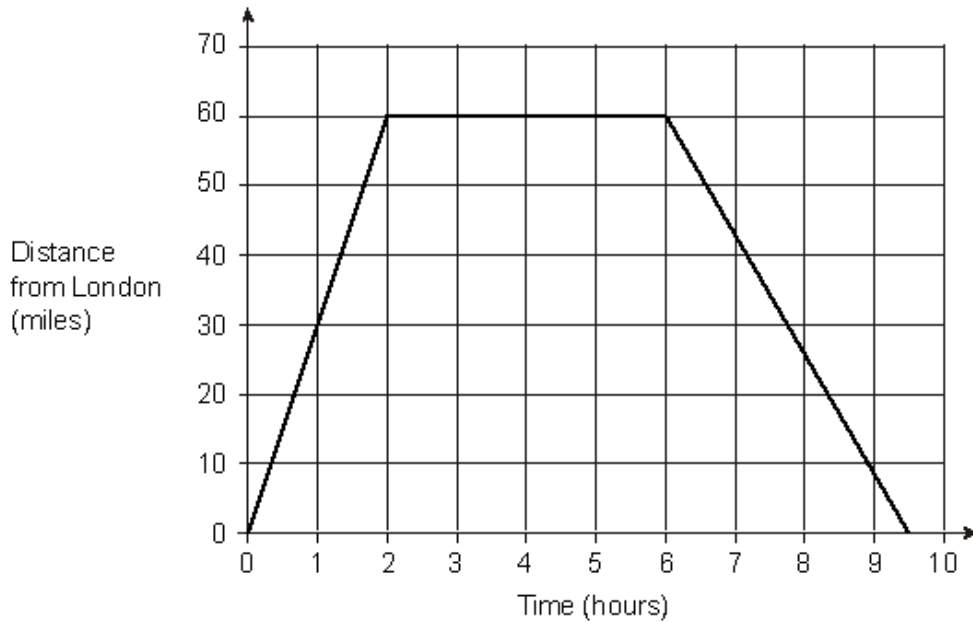
(b) How long does the journey take on the 11:36 train?

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Answer minutes

(2)

(c) The graph shows a car journey from London to Brighton and back.



(i) How long does this journey to Brighton take?

Answer hours

(1)

(ii) How long is the stay in Brighton?

Answer hours

(1)

(iii) How many miles is the total journey from London to Brighton and back?

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Answer miles

(1)

(d) Which journey is faster, London to Brighton or Brighton to London?
Explain your answer.

.....
.....
.....

(1)

(Total 7 marks)

Q4. Here are instructions for cooking a turkey.

Cook for 15 minutes at 220 °C
 Reduce the oven temperature to 160 °C
 and cook for 40 minutes per kilogram.

Kirsty is going to cook a 7 kilogram turkey.
 She wants to take it out of the oven at 12:45 pm.

At what time must she start to cook it?

.....

Answer

(Total 4 marks)

Q5. Fastbus and Quickline run buses on the same routes.
 Paul and Sally are comparing the service of Fastbus and Quickline.

The table shows the advertised journey time for each of nine routes.
 It also shows the number of minutes late for the first bus on each route one morning.

	Fastbus		Quickline	
	Advertised journey time (minutes)	Number of minutes late	Advertised journey time (minutes)	Number of minutes late
Route A	120	5	140	0
Route B	60	0	70	0
Route C	145	15	150	45
Route D	180	30	180	60
Route E	95	5	100	0
Route F	140	20	150	5
Route G	95	5	120	0
Route H	110	0	120	25
Route I	70	10	80	0

Example: Route A - Fastbus 5 minutes late, Quickline on time (0 minutes late)

- (a) Write down the advertised journey time for Quickline on route B.
Give your answer in hours and minutes.

.....
 Answer hours minutes

(1)

- (b) How many more minutes late was Fastbus than Quickline on route F?

.....

 Answer minutes

(2)

- (c) Show that the median number of minutes late for Fastbus is 5 minutes.

.....

(2)

- (d) Complete the table below by working out the mean number of minutes late for Quickline.

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(2)

	Fastbus	Quickline
Mean number of minutes late	10	
Median number of minutes late	5	0
Modal number of minutes late	5	0

- (e) Paul and Sally disagree over who has the better bus service, Fastbus or Quickline.

- (i) Paul says that Fastbus is better.

Give **one** reason why Paul could be correct.

.....

(1)

- (ii) Sally says that Quickline is better.

Give **one** reason why Sally could be correct.

.....

(1)

- (f) Give **one** other factor which could be used to compare the service of Fastbus and Quickline.

.....
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(1)
(Total 10 marks)

