

Name

Class



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# Time calculations

(9 – 1) Topic booklet

These questions have been collated from previous years GCSE Mathematics papers.

**You must have:** Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser.

Total Marks

## Instructions

- Use **black** ink or ball-point pen.
- Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided  
– *there may be more space than you need.*
- Diagrams are NOT accurately drawn, unless otherwise indicated.
- You must **show all your working out.**
- If the question is a **1F** question you are not allowed to use a calculator.
- If the question is a **2F** or a **3F** question, you may use a calculator to help you answer.

## Information

- The marks for **each** question are shown in brackets  
– *use this as a guide as to how much time to spend on each question.*

## Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

**Answer ALL questions**  
**Write your answers in the space provided.**  
**You must write down all the stages in your working.**

**1** Write 180 minutes in hours.

..... hours

June 2019 – Paper 1F

**(Total for Question 1 is 1 mark)**

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**2** How many minutes are there in  $3\frac{1}{4}$  hours?

..... minutes

Specimen 1 – Paper 1F

**(Total for Question 2 is 1 mark)**

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**3** What is the time 2 hours 40 minutes after 8.05 am?

..... am

November 2021 – Paper 3F

**(Total for Question 3 is 1 mark)**

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- 4 The film starts at 6.45 pm.  
The film lasts 102 minutes.

What time does the film finish?

.....  
(2)

November 2017 – Paper 3F

**(Total for Question 4 is 2 marks)**

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**6** Liz is watching a film at the cinema.

The film started at 1430

The film is 105 minutes long.

When the film ends, Liz takes 20 minutes to get to the bus stop.

A bus leaves the bus stop at 1645

Does Liz get to the bus stop in time to get this bus?

You must show all your working.

6 Here is part of a train timetable from Swindon to London.

<b>Swindon to London</b>							
Swindon	06 10	06 27	06 41	06 58	07 01	07 17	07 28
Didcot	06 27	06 45	06 58	–	07 18	–	07 45
Reading	06 41	06 59	07 13	07 28	07 33	07 43	08 00
London	07 16	07 32	07 44	08 02	08 07	08 14	08 33

(a) How long should the 06 58 train from Swindon take to get to London?

.....  
(1)

Clare says,

“All these trains take more than one hour to get from Swindon to London.”

(b) Is Clare correct?

You must give a reason for your answer.

.....  
.....  
(1)

7 Work out the difference, in minutes, between 1 hour 25 minutes and  $1\frac{1}{4}$  hours.

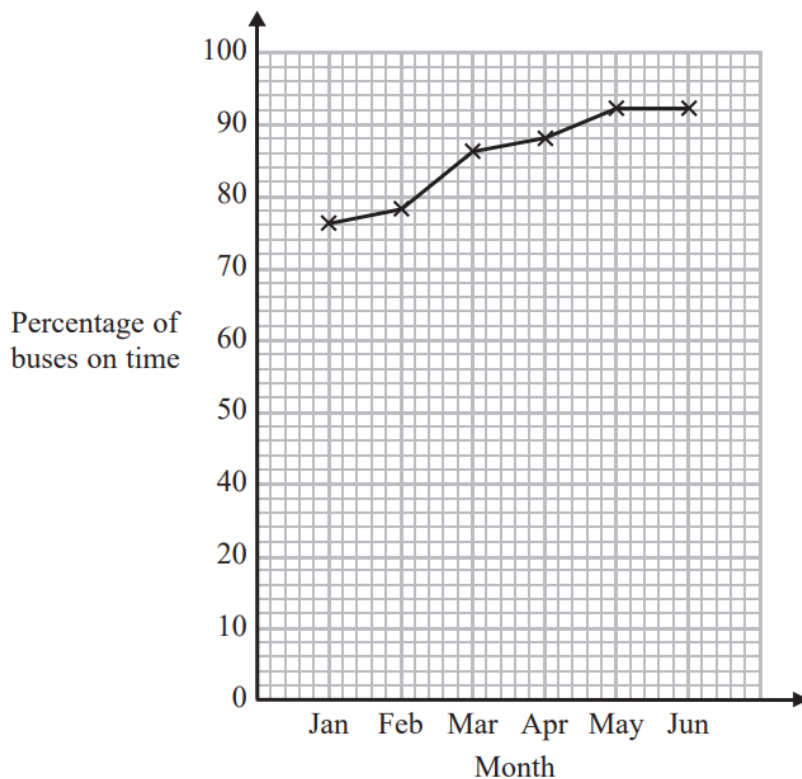
..... minutes

November 2019 – Paper 1F

**(Total for Question 7 is 2 marks)**

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- 8 Chrissy drew this graph to show the percentage of buses that got to a bus stop on time for six months.



- (a) Write down **one** thing that is wrong with the graph.

.....  
.....  
(1)

- (b) Describe the trend in the percentage of buses that got to the bus stop on time.

.....  
(1)

9 This is part of a bus timetable between Bury and Manchester.

<b>Bury</b>	08 25	08 55	09 15	09 30	09 45	10 05
Whitefield	08 34	09 04	09 24	09 39	09 54	10 14
Heaton Park	08 46	09 16	09 36	09 51	10 06	10 27
Cheetham	08 56	09 26	09 46	10 01	10 16	10 37
<b>Manchester</b>	09 05	09 35	09 55	10 10	10 25	10 48

(a) How many minutes should the 08 25 bus take to go from Bury to Manchester?

..... minutes  
(1)

Daniel goes from Whitefield to Manchester by bus.

Daniel takes 17 minutes to get from his house to the bus stop in Whitefield.

He takes 15 minutes to get from the bus stop in Manchester to work.

Daniel has to get to work by 10 am.  
He leaves his house at 8.45 am.

(b) Does Daniel get to work by 10 am?  
You must show all your working.

(3)



9 Davos is a cleaner.

The table shows information about the time it will take him to clean each of four rooms in a house.

Room	Time
Kitchen	2 hours
Sitting room	1 hour 40 minutes
Bedroom	$1\frac{1}{2}$ hours
Bathroom	45 minutes

Davos wants to clean all four rooms in one day.  
He will have breaks for a total time of 75 minutes.

Davos is going to start cleaning at 9 am.

Will he finish cleaning by 4 pm?  
You must show all your working.

10 Here is part of a bus timetable between Wigan and Bolton.

<b>Wigan</b>	07 20		07 40		07 55
<b>Blackrod</b>	07 49		08 09		08 24
<b>Horwich</b>	08 00	08 14	08 20	08 29	08 36
<b>Lostock</b>	08 09	08 20	08 29	08 37	08 44
<b>Park Road</b>	08 14	08 34	08 41	08 48	08 58
<b>Bolton</b>	08 32	08 51	08 58	09 05	09 15

(a) How many minutes should the 07 20 bus take to go from Wigan to Lostock?

..... minutes  
(2)

Alison goes from Blackrod to Bolton by bus.

One day Alison leaves her house at 08 00

She takes 7 minutes to walk to the bus stop in Blackrod.

She takes 15 minutes to walk from the bus stop in Bolton to work.

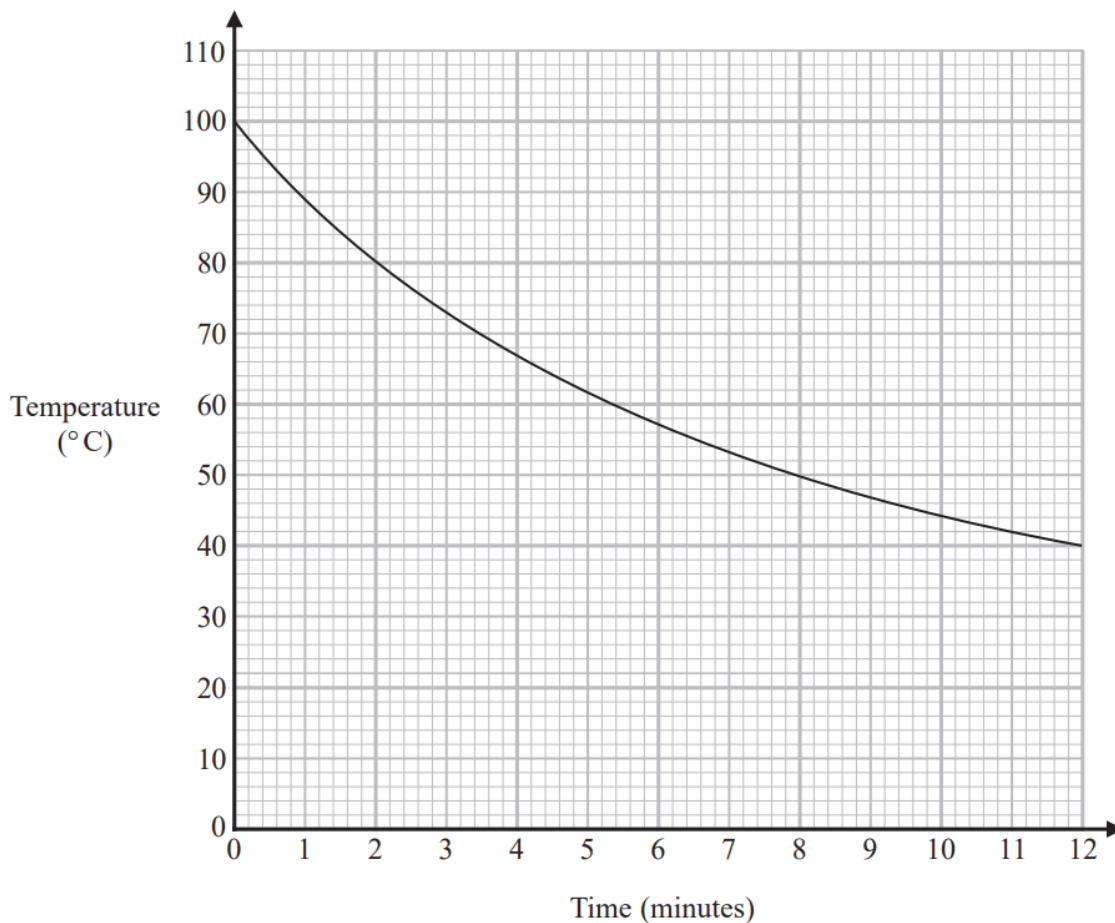
Alison needs to be at work for 09 20

(b) Will Alison get to work for 09 20?

You must show how you get your answer.

(3)

- 10 The graph shows information about the time, in minutes, a liquid has been cooling and the temperature of the liquid in °C.



- (a) What is the temperature of the liquid at time 2 minutes?

..... °C  
(1)

Pam recorded the time when the liquid had a temperature of 50°C.

- (b) Write down this time.

..... minutes  
(1)

Pam says that the temperature of the liquid drops more in the first 3 minutes of cooling than it does between time 9 minutes and time 12 minutes.

- (c) Is Pam correct?

Give a reason for your answer.

.....  
.....  
.....  
(1)

**11 (a)** Write 196 minutes in hours and minutes.

..... hours ..... minutes  
(2)

November 2021 – Paper 3F

**(Total for Question 11 is 2 marks)**

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**12** Elena spent 120 minutes at a sports centre.

She played badminton for 50 minutes.

She used the swimming pool for  $\frac{1}{6}$  of the 120 minutes.

She used the gym for 20% of the 120 minutes.

She then spent the rest of the 120 minutes in the cafe.

(a) Work out the total time, in minutes, that Elena spent in the cafe.

..... minutes  
(4)

Elena got to the sports centre at 1.30 pm.

She had asked her friend to meet her in the cafe at 3 pm.

(b) Did Elena get to the cafe by 3 pm?

Give a reason for your answer.

.....  
.....  
.....  
(1)

12 Here is part of a train timetable.

<b>Brighton</b>	07 22	07 29	07 32
<b>London</b>	09 00	08 32	08 48

Graham gets to the station in Brighton at 07 15

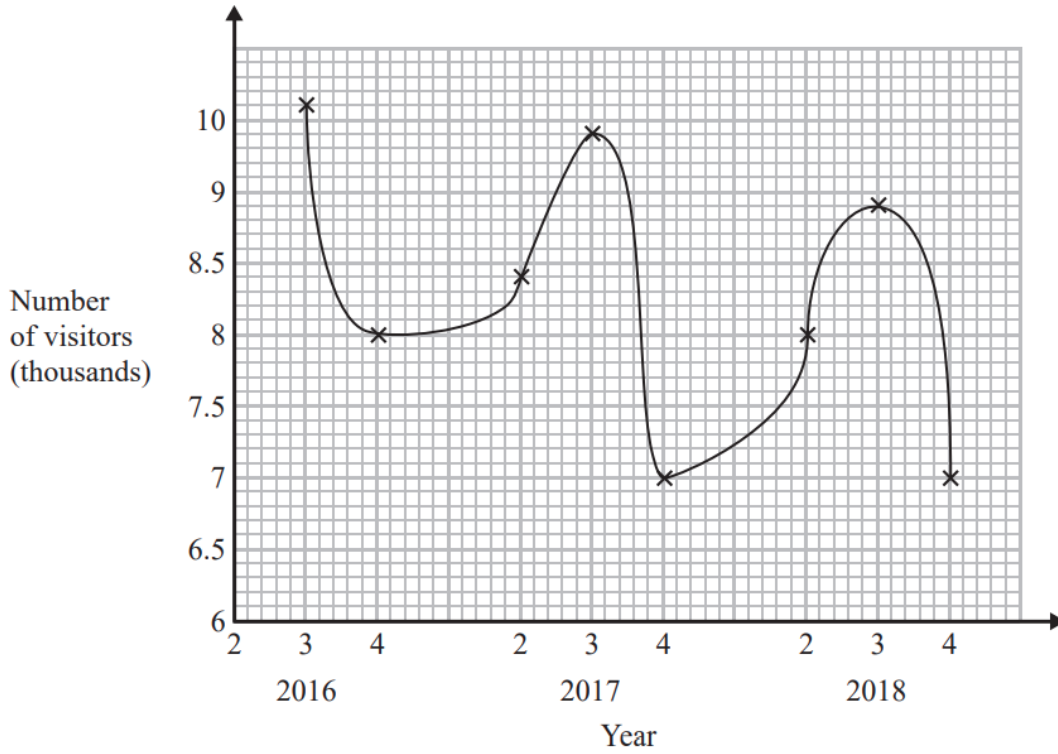
(a) Work out how many minutes he has to wait until 07 22

..... minutes  
(1)

(b) Work out how long it will take the 07 22 train to get to London.

.....  
(2)

27 Sean has drawn a time series graph to show the numbers, in thousands, of visitors to a fun park.



Write down two things that are wrong or could be misleading with this graph.

1 .....

.....

.....

2 .....

.....

.....