

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
Cambridge Checkpoint

CANDIDATE
NAME

CENTRE
NUMBER

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CANDIDATE
NUMBER

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MATHEMATICS

1112/01

Paper 1

May/June 2010

1 hour

Candidates answer on the Question Paper

Additional Materials: Geometric Instruments

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.

Write in dark blue or black pen.

You may use a soft pencil for any diagrams or graphs.

Do not use staples, paperclips, highlighters, glue or correction fluid.

DO NOT WRITE IN ANY BARCODES.

Answer all questions.

NO CALCULATOR ALLOWED.

You should show all your working in the booklet.

The number of marks is given in brackets [] at the end of each question or part question.

The total number of marks for this paper is 50.

This document consists of 10 printed pages and 2 blank page.



1 Look at this list of numbers.

4 9 10 11 21 27

Using **only** the numbers in the list, complete the following statements.

(a) is a prime number. [1]

(b) is a multiple of seven. [1]

(c) $3^3 =$ [1]

(d) $\sqrt{100} =$ [1]

(e) is a factor of [1]

2 Use the information that

$$22.1 \times 32.5 = 718.25$$

to write down the answers to the following questions.

(a) $22.1 \times 325 =$ [1]

(b) $718.25 \div 22.1 =$ [1]

(c) $2.21 \times 3.25 =$ [1]

(d) $718.25 \div 3.25 =$ [1]

(e) $2210 \times 325 =$ [1]

- 3 (a) James travels 382 km in 5 hours.
Calculate his average speed.

..... km/h [2]

- (b) Amy walks 14 km.
She walks at an average speed of 4 kilometres per hour.

- (i) Work out how long she takes.

..... hours [1]

- (ii) She leaves home at 09 15.
At what time does she get home?

..... [1]

4 The table shows some of the temperatures, in $^{\circ}\text{C}$, at dawn each morning one week.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	-4	-1	5	0		-3

(a) The temperature at dawn on Friday is 5°C higher than on Saturday.
Complete the table.

[1]

(b) Which day has the lowest dawn temperature?

..... [1]

(c) What is the difference between the temperatures at dawn on Wednesday and Saturday?

..... $^{\circ}\text{C}$ [1]

(d) The temperature at noon on Monday is 7°C .
By how much has the temperature

(i) risen since dawn on Monday,

..... $^{\circ}\text{C}$ [1]

(ii) fallen by dawn on Tuesday?

..... $^{\circ}\text{C}$ [1]

5 The humidity on five days is shown below.

Monday	46
Tuesday	42
Wednesday	47
Thursday	48
Friday	42

Work out

(a) the range,

..... [1]

(b) the mode,

..... [1]

(c) the median,

..... [1]

(d) the mean.

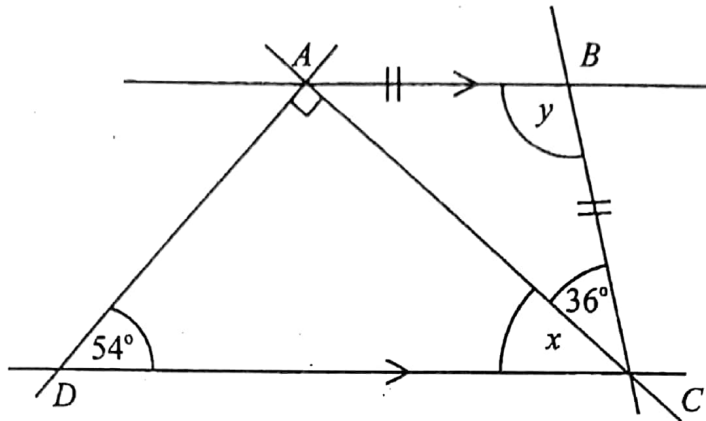
..... [2]

- 6 In the table, the numbers in each row are equivalent.
Complete the table.

Decimal	Fraction	Percentage
	$\frac{1}{5}$	20
0.31		
	$\frac{3}{8}$	

[5]

7 (a) In the diagram AB is parallel to DC and $AB = BC$.



NOT TO SCALE

(i) Work out the size of angle x .

$x =$ [1]

(ii) Work out the size of angle y .

$y =$ [1]

(b) Each exterior angle of a regular polygon is 40° .

(i) How many sides does the polygon have?

..... [2]

(ii) Work out the size of an interior angle in this polygon.

..... [1]

8

$$v = u + at$$

(a) Find the value of v when $u = 20$, $a = 3$ and $t = 5$.

$$v = \dots\dots\dots [2]$$

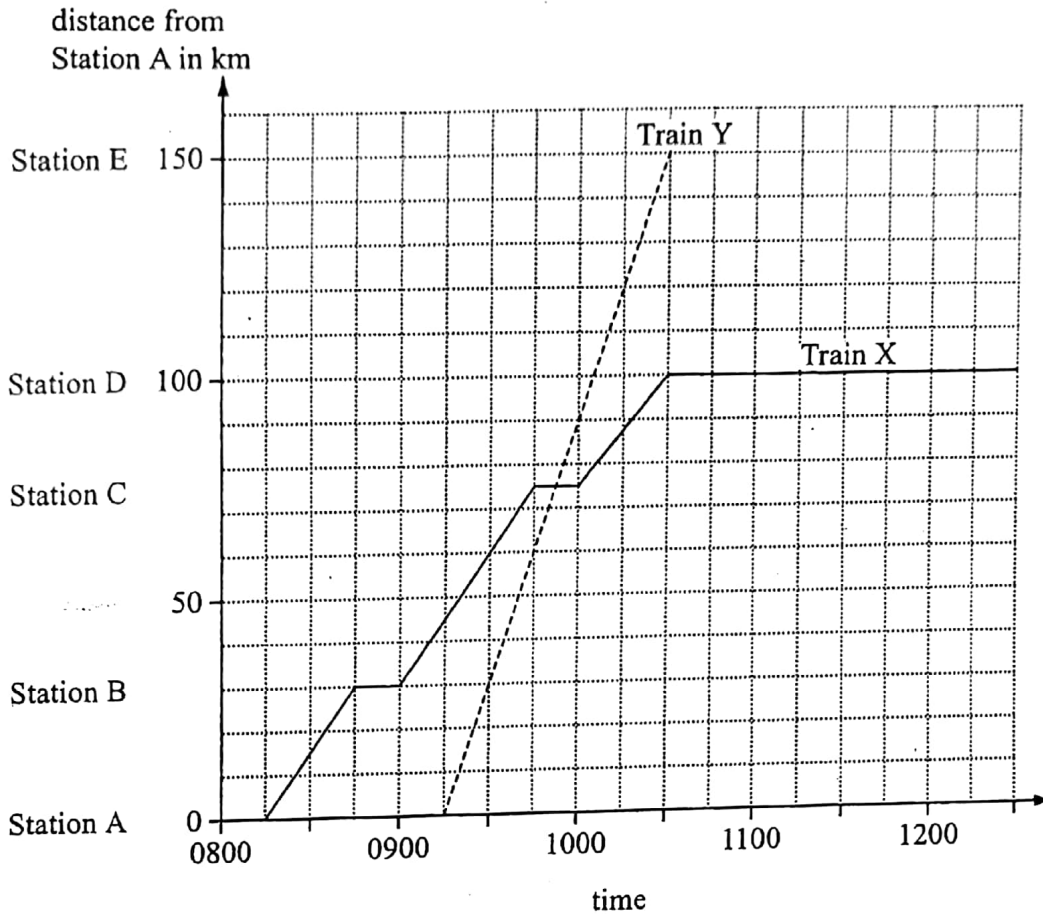
(b) Rearrange the equation $v = u + at$ to make u the subject.

$$u = \dots\dots\dots [1]$$

(c) Find u when $v = 0$, $a = -5$ and $t = 3$.

$$u = \dots\dots\dots [2]$$

9 The graph shows information about two trains.



(a) Train X stops at three stations.

(i) At what time does it arrive at Station B?

..... [1]

(ii) What is the distance between Station A and Station C?

..... km [1]

(b) Train Y travels non-stop to Station E.

(i) Work out the speed of Train Y between Stations A and E.

..... km/h [2]

(ii) The train remains at Station E for $\frac{1}{2}$ hr and then returns to Station A travelling at the same speed.

Show the return journey on the grid. [2]

10 Find the value of the following expressions when $a = -2$ and $b = 3$.

(a) $a + b^2$

..... [1]

(b) ab^2

..... [2]

(c) $(ab)^2$

..... [2]