Bronze Level

Model Answers 4

Level	IGCSE
Subject	Maths
Exam Board	Edexcel
Difficulty Level	Bronze
Booklet	Model Answers 4

Time Allowed: **51 minutes**

Score: **/ 42**

Percentage: **/100**

1 A group of students take a test.
The group consists of 12 boys and 8 girls.
The mean mark for the boys is 18
The mean mark for the girls is 16.5
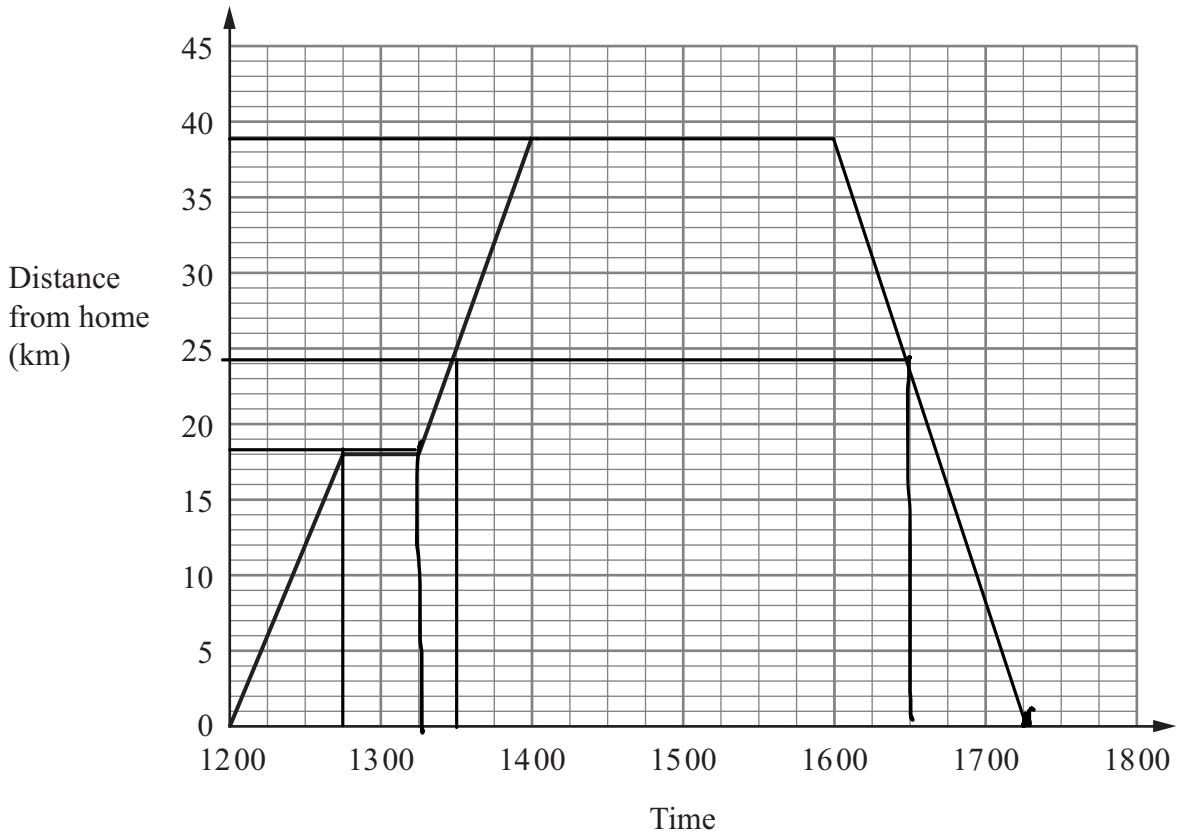
Calculate the mean mark for the whole group.

$$(18 \times 12) + 8(16.5) = 348$$

boys   girls

$$\Rightarrow \frac{348}{20} = 17.4$$

17.4

(Total for Question is 4 marks)

2 Bhavik left his home at 12 00 to cycle to Sam's house.
On the way Bhavik stopped for a rest, and then continued his journey.
The distance-time graph shows his journey.

(a) (i)   For how many minutes did Bhavik stop for a rest?

30 .... minutes

(ii) After his rest, how many more kilometres did Bhavik cycle to Sam's house?

21 .... km

(2)

(b) Bhavik stayed at Sam's house for 2 hours.
He then cycled back to his home.
He arrived home at 17 15.

Show all this information on the graph.

(2)

(c) Write down the times at which Bhavik was 24 kilometres from his home.

13: 30 ....

16: 30 ....

(2)

(d) Work out the average speed, in kilometres per hour, of Bhavik's journey from Sam's house back to his home.

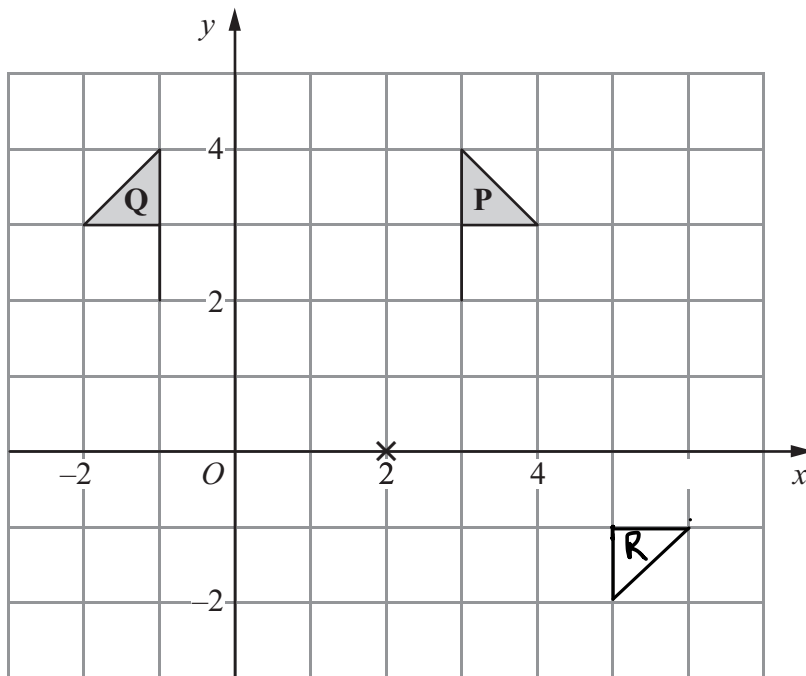Give your answer correct to 1 decimal place.

$$\frac{39}{1.25} = 31.2$$

31.2

.... km/h

(3)

(Total for Question is 9 marks)

3

(a) Describe fully the single transformation that maps shape **P** onto shape **Q**.

reflection in x = 1

(2)

(b) On the grid, rotate shape **P** 90° clockwise about the point (2, 0).
Label the new shape **R**.

(2)

(Total for Question is 4 marks)

4 (a) Show that $\frac{4}{5} \div \frac{7}{15} = 1\frac{5}{7}$

$$\frac{4}{5} \times \frac{15}{7} = \frac{12}{7} = 1 + \frac{5}{7} = 1\frac{5}{7}$$

(2)

(b) Show that $5\frac{1}{4} - 1\frac{2}{3} = 3\frac{7}{12}$

$$\frac{21}{4} - \frac{5}{3} = \frac{63}{12} - \frac{20}{12} = \frac{43}{12}$$

$$\frac{43}{12} = 3\frac{7}{12}$$
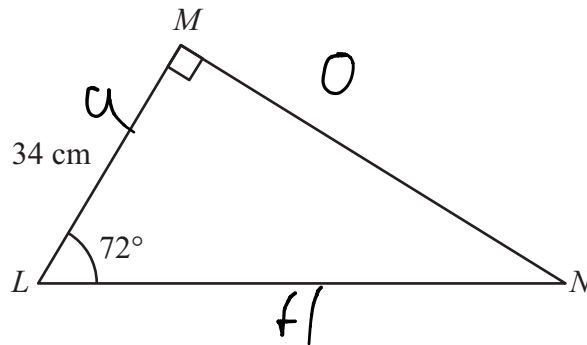
(3)

(Total for Question is 5 marks)

5 .

M

O

Diagram **NOT**
accurately drawn

a

34 cm

72°

L

f|

N

Calculate the length of *MN*.
Give your answer correct to 3 significant figures.

$\tan 72°$ $\tan\left(\frac{O}{a}\right)$

$\tan(\theta) \times 34 = O = 105\,cm$

105

cm

(Total for Question is 3 marks)

6 Express 300 as a product of its prime factors.

$2(150)$

$2(2)(75)$

$2(2)(3)(25)$

$2(2)(3)(5)(5)$

Divide by lowest prime untill the answer is not an integer

$2 \times 2 \times 3 \times 5 \times 5$

(Total for Question is 3 marks)

7 The table shows information about the snowfall in Ottawa in January one year.

Snowfall (s cm)	Number of days
$0 \leqslant s < 2$	19
$2 \leqslant s < 4$	8
$4 \leqslant s < 6$	3
$6 \leqslant s < 8$	0
$8 \leqslant s < 10$	1

Work out an estimate for the total snowfall in January.

mid point × Freq

+ 1×19
+ 3× 8
+ 5×3
+ 7×0   = 67
+ 9 ×1

.... 67 .... cm

(Total for Question is 3 marks)

8 A, B and C are three sets.

$A \cap B = \varnothing$ and $C \subset A$
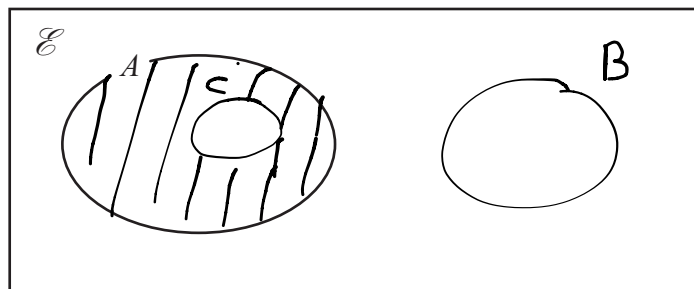
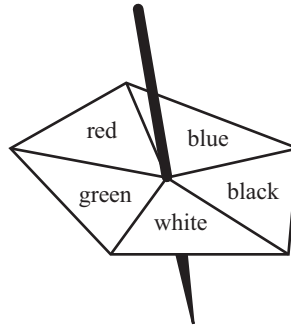(a) Complete the Venn diagram to show the sets B and C

(2)

(b) On the Venn diagram, shade the region that represents $A \cap C'$

(1)

(Total for Question is 3 marks)

9 Here is a biased 5-sided spinner.

When the spinner is spun, it can land on red, blue, black, white or green.
The probability that it lands on red, blue, black or white is given in the table.

Colour	red	blue	black	white	green
Probability	0.18	0.20	0.23	0.22	

George spins the spinner once.

(a) Work out the probability that the spinner lands on green.

Total probablity = 1

∴ 1 = 0.18 + 0.20 + 0.23 + 0.22 + P_g

∴ P_g = 1 − (0.18 + 0.20 .....) =   0.17

(2)

Heena spins the spinner 40 times.

(b) Work out an estimate for the number of times the spinner lands on blue.

n × P

40 × 0.2 = 8

8

(2)

(Total for Question is 4 marks)

10 Rectangle **A** has a width of *x* metres and a height of (*x* + 2) metres.   Rectangle **B** has a width of 2*x* metres and a height of 4*x* metres.
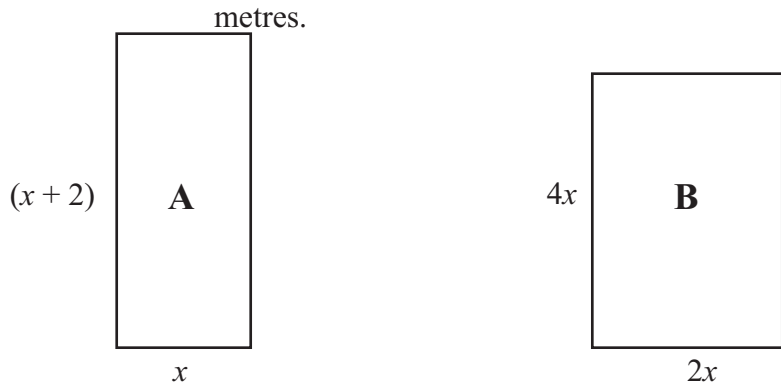
Diagram **NOT** accurately drawn

(*x* + 2) | **A**

x

4*x* | **B**

2*x*

The perimeter of rectangle **A** is equal to the perimeter of rectangle **B**.

(i) Use this information to write down an equation in *x*.

A : $2(x+2) + 2x$

B : $2(4x) + 2(2x)$

$2(x+2) + 2x = 2(4x) + 2(2x)$

$4x+4 = 12x$

$\rightarrow 2x+2 = 6x$

$$2x+2 = 6x$$

(ii) Find the value of *x*.

$$2x+2 = 6x$$

$$2 = 4x$$

$$x = \frac{1}{2} = 0.5$$

x = ... 0.5 ....

(Total for Question is 4 marks)