

Write your name here

Surname

Other names

**Pearson Edexcel
Functional Skills**

Centre Number

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Candidate Number

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Mathematics

Level 2



16–20 June 2014

Time: 1 hour 30 minutes

Paper Reference

FSM02/01

You must have:

Pen, calculator, HB pencil, eraser, ruler graduated in cm and mm, protractor, compasses.

Total Marks

--

My signature confirms that I will not discuss the content of the test with anyone until the end of the 5 day test window.

Signature: _____

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.
- Sign the declaration.
- Answer **all** questions.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- **Calculators may be used.**

Information

- The total mark for this paper is 48.
- The marks for each question are shown in brackets – *use this as a guide as to how much time to spend on each question.*
- **Where you see this sign you must show clearly how you get your answers because marks will be awarded for your working out.**
- **Check your working and your answers at each stage.**



Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.

Turn over ►

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P 4 5 1 9 1 R A 0 1 2 0

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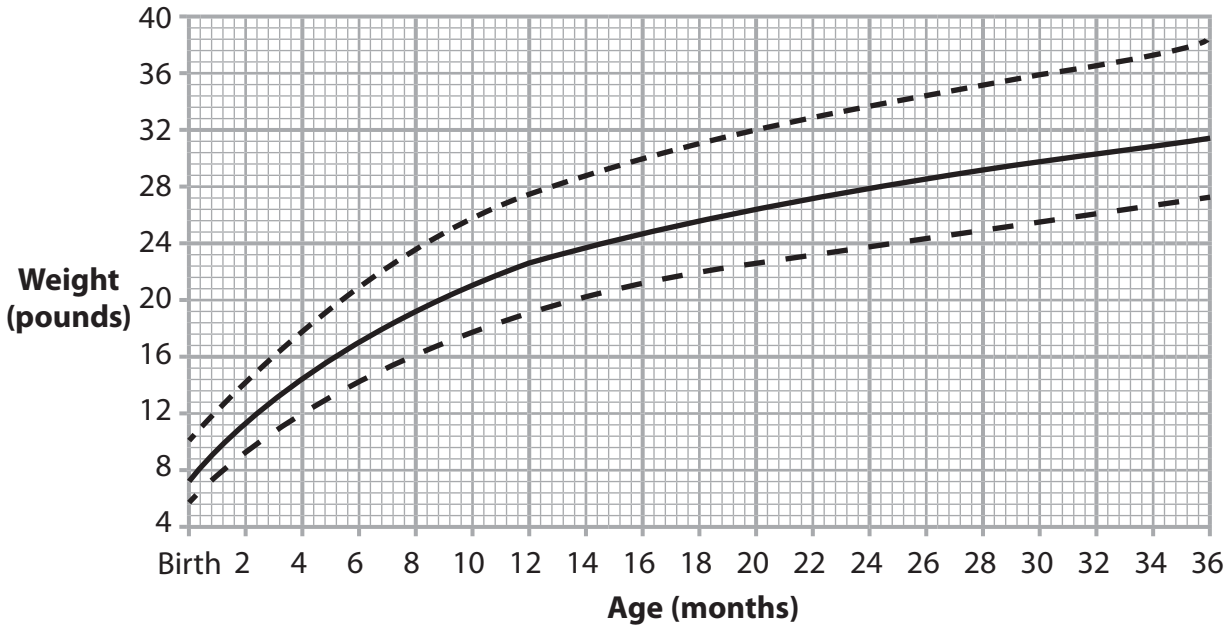
SECTION A: Alfie

Answer all questions in this section.

Write your answers in the spaces provided.

- 1 Ruby has a son called Alfie.
The health visitor shows her this graph.

Weight for age – Boys



Key: - - - - - Maximum weight
————— Average weight
- . - . - Minimum weight

Alfie is 18 months old and he weighs 22 pounds.
His weight was 9 pounds at birth.

The health visitor wants to plot Alfie's weight on the graph.

- (a) On the graph mark Alfie's weight at birth and his weight at 18 months.

(1)



(b) Use the graph to comment on Alfie's weight.

(2)

Write your comment in the box below.

Ruby finds this formula to work out the expected adult height of a boy.

$$H = \frac{F + M}{2} + 6.5$$

H = expected adult height of boy (cm)

F = height of father (cm)

M = height of mother (cm)

- The height of Alfie's father is 170 cm.
- Ruby's height is 155 cm.

Ruby works out that Alfie's expected adult height is 160 cm.

(c) Is Ruby correct?
Show why you think this.

(3)

Use the box below to show clearly how you get your answer.



(Total for Question 1 is 6 marks)



2 Alfie has a cardboard box for toys.

The box is in the shape of a cuboid with dimensions

- length 40 cm
- width 20 cm
- height 30 cm.

(a) Make a sketch of the box.
Label the dimensions.

(2)

Draw your sketch in the box below.



Ruby wants to decorate the sides and base of the box.
She has a piece of sticky back plastic 150 cm by 90 cm.

The plastic is marked in 10 cm squares.

The box has

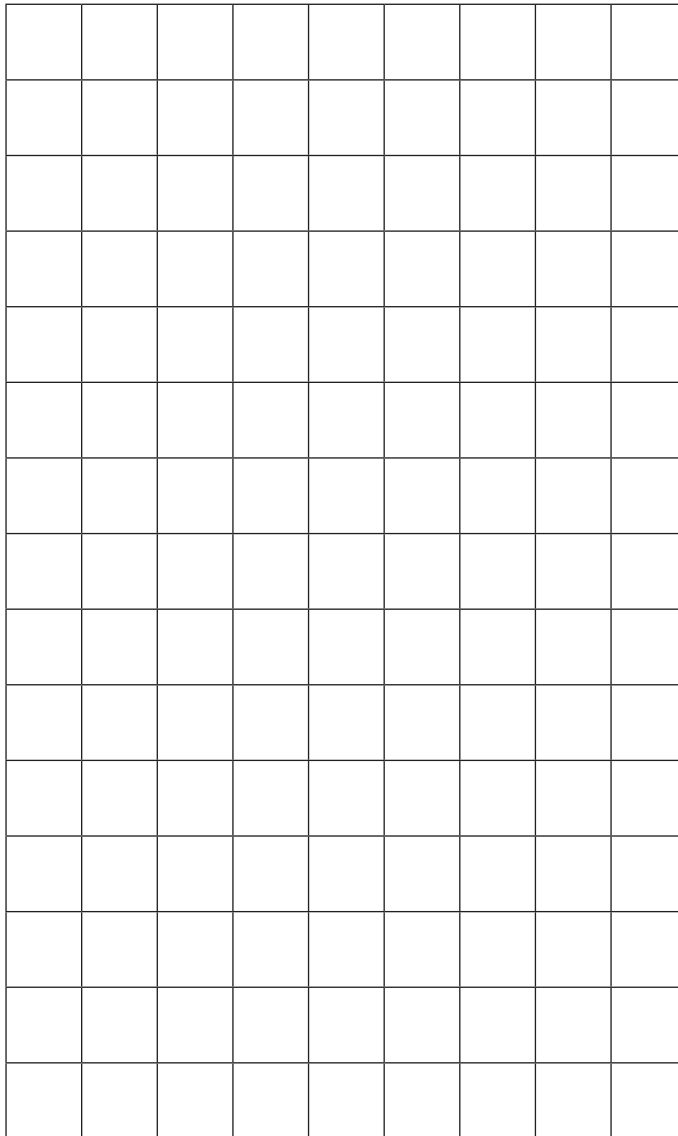
- length 40 cm
- width 20 cm
- height 30 cm.

Ruby needs to draw the net of the open box on the sticky back plastic.
The grid shows the piece of plastic.

(b) Draw the shape Ruby should cut from the sticky back plastic.

(3)

Draw your shape on the grid below.



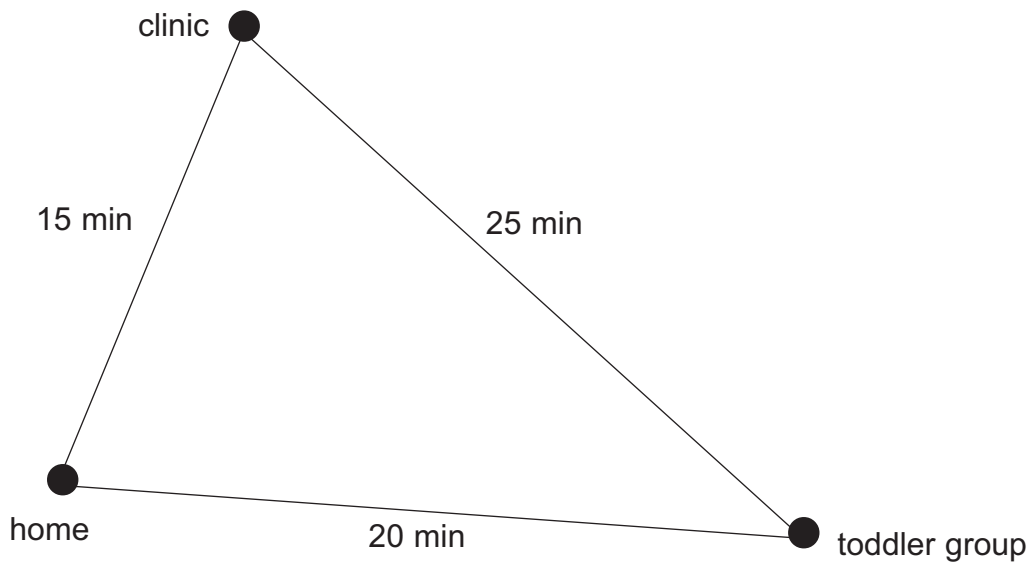
(Total for Question 2 is 5 marks)



3 Ruby makes notes about what she needs to do with Alfie on Tuesday.

toddler group with Alfie 9 am (stay 2 hours)
clinic at quarter past 3 (allow 30 min)
lunch at home 12 noon (1 hour)
afternoon nap at home ($1\frac{1}{4}$ hour)
home for tea by 5 pm

The diagram below shows the journey times between her home, the toddler group and the clinic.



Ruby wants a time plan to fit in everything she has to do on Tuesday.

The time plan must show the start time and the end time of each activity and of each journey.

Make a time plan for Ruby.

(5)



Use the box below to show your time plan.



(Total for Question 3 is 5 marks)



SECTION B: Landscape gardening

Answer all questions in this section.

Write your answers in the spaces provided.

4



Billy is a landscape gardener.

He needs to put 8 tonnes of top soil in a garden for a customer.
The top soil costs £35 per tonne.

Billy needs 2 men to put the soil in the garden.
He is going to pay each man £8.25 per hour.

The job will take 6 hours.
Billy charges the customer £500 for the job.

Billy thinks he will have £121 left after buying the soil and paying the men.

Is Billy correct?
Show why you think this.

(4)



Use the box below to show clearly how you get your answer.



A large, empty rectangular box with rounded corners, intended for the student to show their working out.

(Total for Question 4 is 4 marks)



P 4 5 1 9 1 R A 0 9 2 0

- 5 Billy has to lay turf for a lawn in the garden.
The lawn is going to be rectangular 16 m by 12 m.

Billy buys rolls of turf.

Each roll is a rectangular piece of turf 610 mm wide and 1640 mm long.



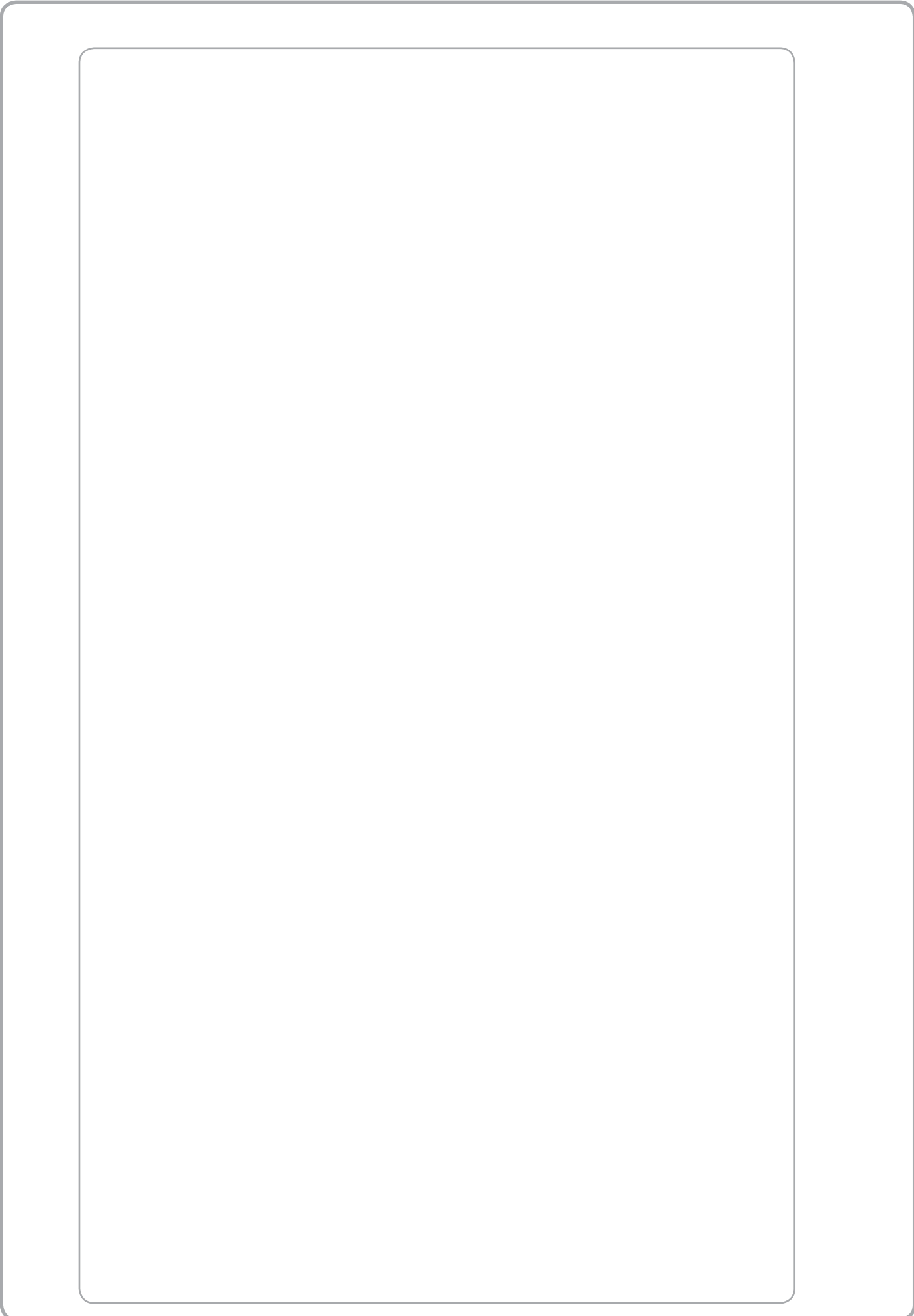
Turf

(a) How many rolls of turf does Billy need?

(6)

Use the box below to show clearly how you get your answer.





Billy wants to know the best day to lay the turf.
He wants to lay the turf in the next 5 days.

He needs a day when

- it is unlikely to rain
- it is likely to rain the following day
- the temperature is greater than 0°C .

Here is the weather forecast for the next 5 days.

Day	Mon	Tue	Wed	Thu	Fri
Minimum temperature ($^{\circ}\text{C}$)	-3	-2	3	2	3
Probability of rain	20%	60%	10%	20%	80%

(b) Choose a day for Billy to lay the turf.
Give reasons for your answer.

(3)

Write your answer in the box below.

(Total for Question 5 is 9 marks)



6 Billy needs to put fertiliser on a lawn.

He uses 750 g of fertiliser for every 30 m² of lawn.

Billy puts the fertiliser on a lawn with an area of 450 m².

How much fertiliser should Billy use for this lawn?

(3)

Use the box below to show clearly how you get your answer.



A large empty rectangular box for showing the solution to the problem.

(Total for Question 6 is 3 marks)



SECTION C: Cricket

Answer all questions in this section.

Write your answers in the spaces provided.

7 Imran is the captain of the Elmfield cricket club.

He organises transport for the club.

The club has matches on Saturday and Sunday this week.

Imran needs to find out from each person

- if they are available on Saturday, Sunday or both
- if they can offer transport to other people
- if they need transport for themselves.

He needs to collect all the information on one sheet.

- (a) Design a data collection sheet for Imran.
Show enough space for at least 5 people.

(3)



Use the box below to show your data collection sheet.

A large, empty rectangular box with rounded corners, intended for students to draw or write their data collection sheet.



Imran wants to choose the best player to bat first on Saturday.

The table shows

- the number of runs two of the players scored in the last 5 matches
- the number of times they were out.

	Runs scored in each match					Times out
Jack	33	11	18	12	21	5
George	12	17	32	19	9	5

A player's batting average is the total number of runs scored divided by the number of times the player is out.

Imran thinks Jack has the better batting average.

(b) Is Imran correct?
Show why you think this.

(3)

Use the box below to show clearly how you get your answer.



(Total for Question 7 is 6 marks)



8 Imran wants to buy a new cricket bat.

The bat is in the sale at his local sports shop.

Pro Bat £270
plus
20% VAT
Buy today and get $\frac{1}{3}$ off

Work out the cost of the bat for Imran.

(4)

(Total for Question 8 is 4 marks)



9 Sarah is going to make tea for a cricket match.

She wants to make 2 cups of tea for each of
22 players
14 officials.

She also plans to sell 200 cups of tea to spectators.

Sarah allows 30 ml of milk for each cup of tea.

She buys 3 bottles of milk.
Each bottle contains 2 litres.

Can Sarah make all the tea with 3 bottles of milk?
Show why you think this.

You must show a check of your working.

(6)

Use the box below to show clearly how you get your answer.



A large empty rectangular box for showing the student's working.



Use the box below to show how you checked your working.

(Total for Question 9 is 6 marks)

TOTAL FOR PAPER IS 48 MARKS



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