edexcel

GCSE Mathematics Practice Tests: Set 5

Paper 3F (Calculator)

Time: 1 hour 30 minutes

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

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*.
- **Calculators may be used.**
- Diagrams are NOT accurately drawn, unless otherwise indicated.
- You must **show all your working out.**

Information

- The total mark for this paper is 80
- 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.

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Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1. One day, Robin recorded the number of people getting on his bus at each of six stops.
Here are his results.

14 4 8 11 12 10

From these numbers, write down

(i) the odd number,

.....

(ii) the multiple of 3,

.....

(iii) the square number,

.....

(iv) the factor of 30.

.....

(Total 4 marks)

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2. Anne owns a taxi company.
Anne uses this formula to work out the total cost, in pounds, of each taxi journey.

total cost = £1.50 × number of miles + £1.20

Bob goes 2 miles in one of Anne's taxis.

(a) Work out the total cost.

£ .....

(2)

John also owns a taxi company.
John uses this formula to work out the total cost, in pounds, of each taxi journey.

total cost = £1.80 × number of miles + 50p

Sharita used one of John's taxis for a journey.
The total cost was £9.50.

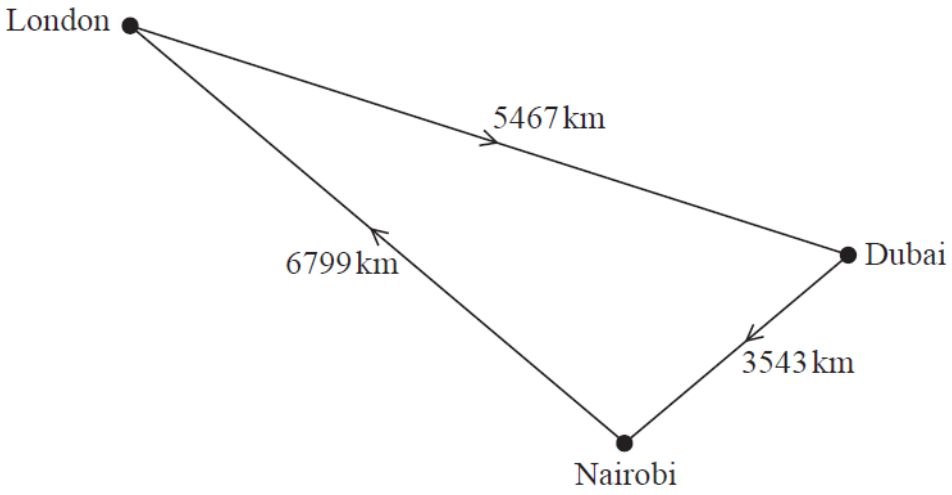
(b) How many miles was Sharita's journey?

..... miles

(3)

(Total 5 marks)

3. A plane flies from London to Dubai and then from Dubai to Nairobi.
Then the plane flies from Nairobi back to London.



The plane flies 5467 km from London to Dubai.

(*a*) Write down the value of the 4 in the number 5467

.....

(1)

The distance the plane flies from London to Dubai and then to Nairobi is further than the distance the plane flies from Nairobi back to London.

(*b*) How much further?

..... km

(2)

(Total 3 marks)

4. Here are the first five terms in a number sequence.

5 9 13 17 21

Find the 10th term in this number sequence.

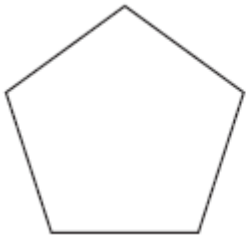
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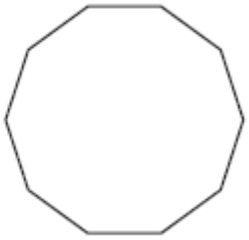
(Total 2 marks)

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5. Here are two regular polygons.

Write down the name of each polygon.





(i) ..... (ii) .....

(Total 2 marks)

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6. There are some sweets in a bag.
The sweets are toffees or mints.

The ratio of the number of toffees to the number of mints is 5 : 3

What fraction of the sweets are mints?

.....

(Total 1 mark)

---

7. Logan says,

"140 millilitres is more than 1.2 litres".

Is he right?
You must explain your answer.

.....

.....

.....

(Total 2 marks)

---

8. Noah got 8 out of 20 in a test.

Write 8 out of 20 as a percentage.

..... %

(Total 2 marks)

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9. The diagram shows a box for chocolates.
The box is in the shape of a triangular prism.

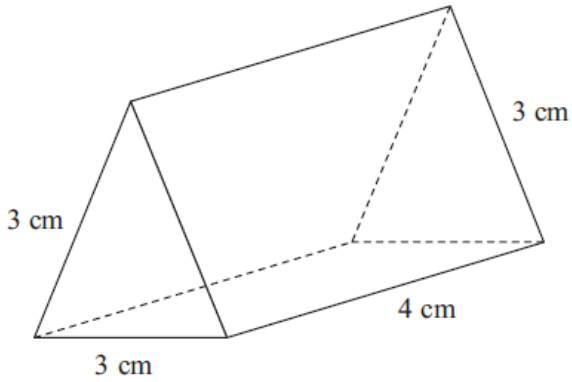


Diagram **NOT** accurately drawn

In the space below, draw an accurate net of this box.

(Total 3 marks)

10. A school has 840 pupils and 40 teachers.

(*a*) Find the ratio of the number of pupils to the number of teachers.
Give your ratio in the form n : 1

..... : 1
(2)

In Year 11 at the school, the ratio of the number of pupils who study Chemistry to the number of pupils who study Physics is 3 : 2

(*b*) 105 pupils in Year 11 study Chemistry.
Work out the number of pupils in Year 11 who study Physics.

.....
(2)

For the 105 pupils who study Chemistry, the ratio of the number of boys to the number of girls is 4 : 3

(*c*) Work out the number of girls in Year 11 who study Chemistry.

.....
(2)

(Total 6 marks)

11. Robbie needs to record 20 minutes of music to play in his restaurant.
He has already recorded the following music.

Playing time

Track 1: 5 minutes 30 seconds

Track 2: 3 minutes 45 seconds

Track 3: 4 minutes 40 seconds

Track 4: 3 minutes 36 seconds

How much more music does he need to record?
Give your answer in minutes and seconds.

..... minutes ..... seconds

(Total 3 marks)

12. Jean has a car. Last year, the costs of running her car were £4200 and £0.16 for every kilometre the car travelled.

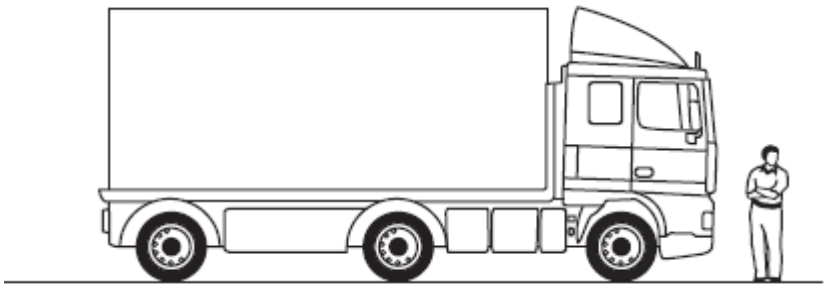
Last year, the total cost of running her car was £5772.

Work out the number of kilometres the car travelled last year.

.....

(Total 3 marks)

13.



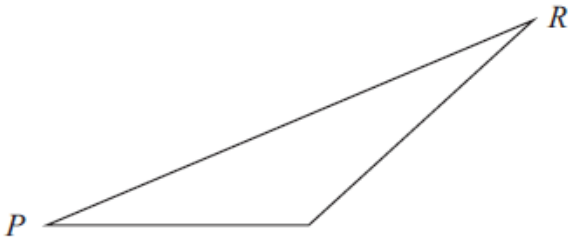
The picture shows a lorry driver standing next to his lorry.

The lorry driver and the lorry are drawn to the same scale.
The lorry driver wants to drive the lorry into a car park.
The entrance to the car park is 2.1 metres high.

Can the lorry driver safely drive the lorry into the car park?
You must clearly show how you got your answer.

(Total 3 marks)

14. Here is a scale drawing of a field.



Scale: 1 cm represents 3 m.

Harry is going to plant some bushes on the side *PR*.
He is going to plant the first bush at *P*.

The bushes will be 2 m apart.
The cost of each bush is £11.99

Work out the total cost of the bushes on the side *PR*.

£.....

(Total 5 marks)

15. $\mathscr{E} = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$

$A = \{1, 3, 5, 7\}$

$B = \{2, 4, 6, 8\}$

(*a*) Explain why the set $A \cap B$ has no members.

.....

.....

(1)

$x \in \mathscr{E}$ and $x \notin A \cup B$.

(*b*) Write down the value of *x*.

x = ...

(1)

$A \cap C = \{3, 7\}$, $B \cap C = \{8\}$ and $A \cup B \cup C = \mathscr{E}$.

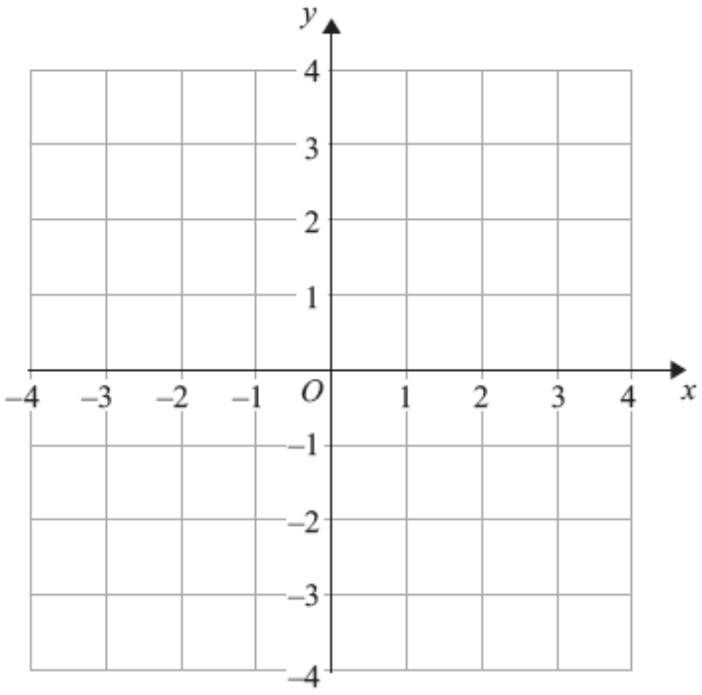
(*c*) List all the members of *C*.

.....

(2)

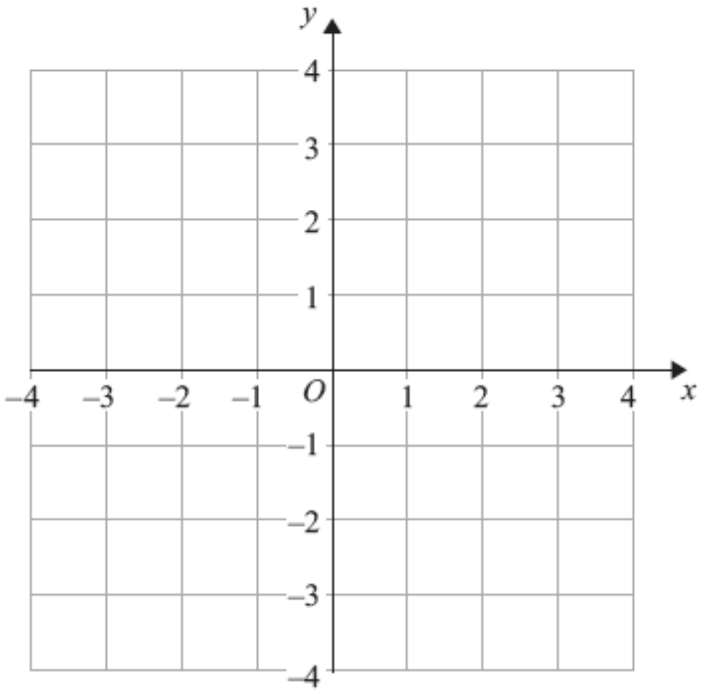
(Total 4 marks)

16.



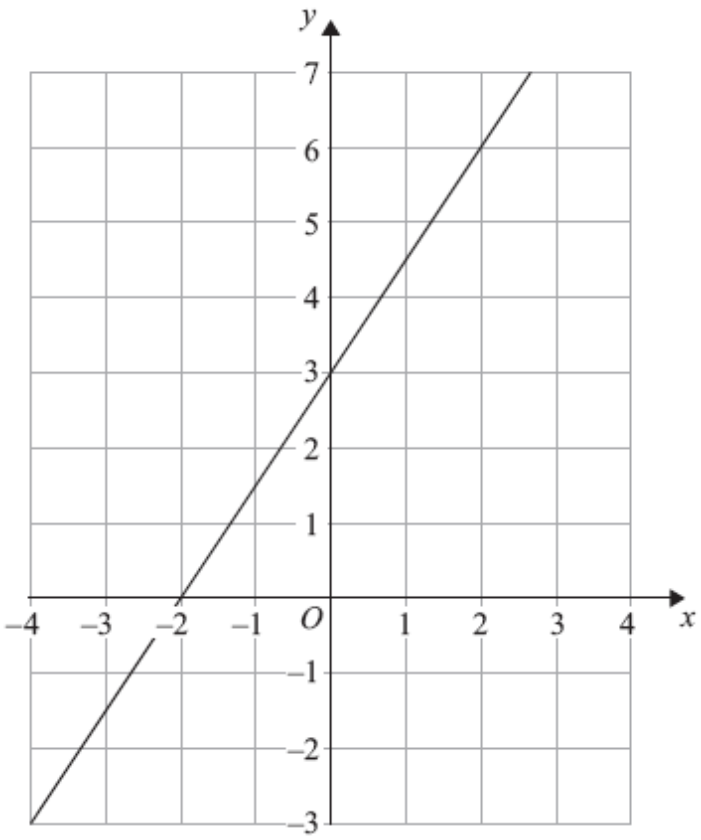
(a) On the grid above, draw the line $x = 3$

(1)



(b) On this grid, draw the line $y = x$

(1)



(c) Find the gradient of the straight line drawn on this grid.

.....

(2)

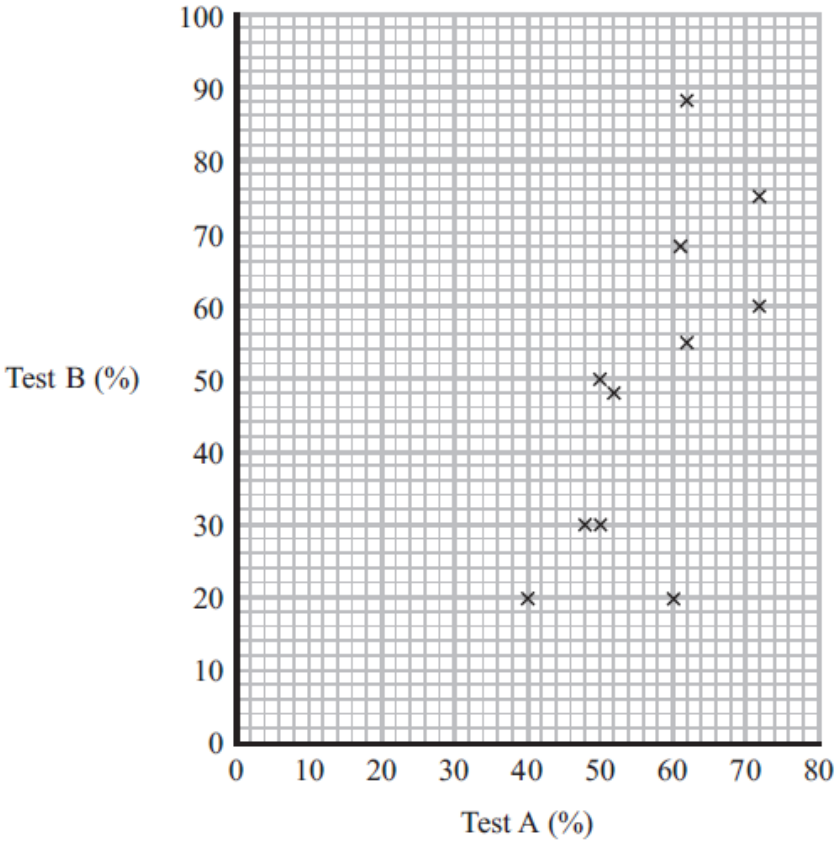
(Total 4 marks)

17. A teacher gives her class two tests.
She records the marks for each test as a percentage.

The scatter graph shows this information.
The teacher has the marks for one more pupil.

This pupil got 76% in test A.
The pupil got 92% in test B.

(a) Show this information on the scatter graph.



(1)

(b) Describe the relationship between the percentage marks in test A and the percentage marks in test B.

.....

.....

(1)

One student missed test B.
This student got 65% in test A.

(c) Estimate this student's percentage for test B.

.....%
(2)

(Total 4 marks)

---

18. Fleur is a gardener in a park.
She buys trays of plants to plant in the park.
The plants will have flowers that are red or yellow or white or blue.

The table gives the probabilities that a flower will be red or yellow or blue.

Colour	red	yellow	white	blue
Probability	0.2	0.3		0.1

(a) What is the probability that a flower will be white?

.....

(2)

There are 120 plants in a tray.

(b) Work out an estimate for the number of these plants that will have red flowers.

.....

(2)

Fleur buys two larger trays of plants, tray A and tray B.
These plants will also have flowers that are red or yellow or white or blue.

The table gives, for each tray, the probabilities that a flower will be red or yellow or white or blue.

	Colour	red	yellow	white	blue
Tray A	**Probability**	0.1	0.2	0.4	0.3
Tray B	**Probability**	0.3	0.3	0.1	0.3

There are
200 plants in tray A
500 plants in tray B

Fleur picks a plant at random from all the plants in the two trays.

(c) What is the probability that this plant will have a white flower?

.....

(2)

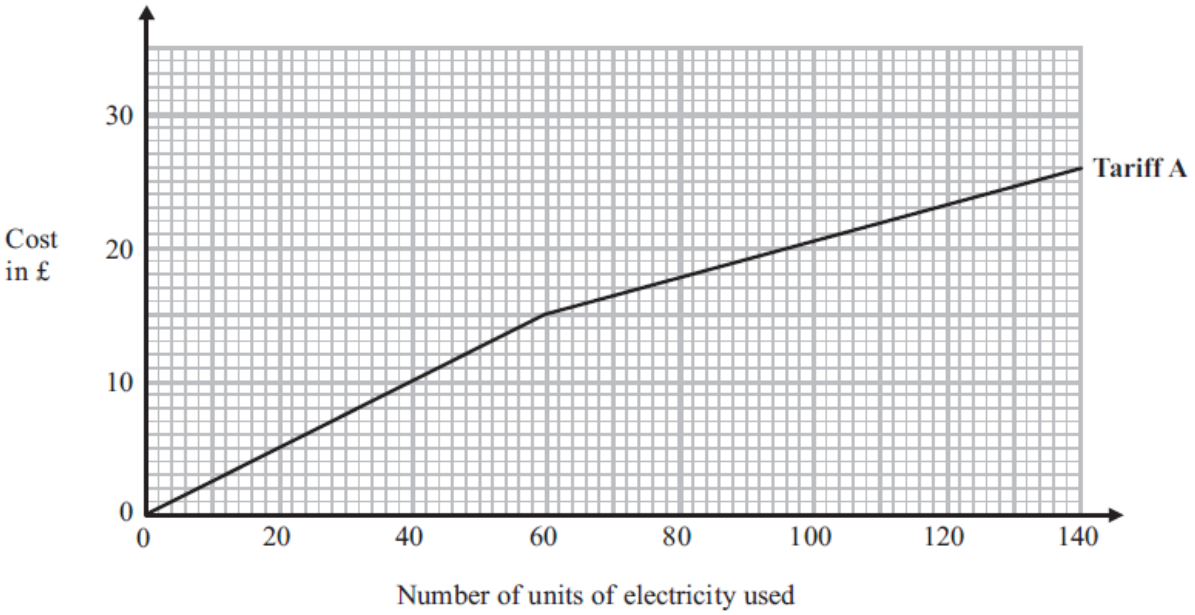
(Total 6 marks)

19. Kalinda pays on Tariff A for the number of units of electricity she uses.
Kalinda can use this graph to find out how much she pays each month.

(a) How much does Kalinda pay for each unit of electricity she uses up to a total of 60 units?

..... p

(2)



Kalinda could change to Tariff B.
Here is the monthly charge for Tariff B.

20p per unit of electricity used

On average, Kalinda uses 90 units of electricity each month.
Kalinda wants to pay the least amount of money for the units of electricity she uses.

*(b) Should Kalinda change to Tariff B?
You must show all your working.

(3)

(Total 5 marks)

20. Henry is thinking about having a water meter.

These are the two ways he can pay for the water he uses.

Water Meter

A charge of £28.20 per year

plus

91.22p for every cubic metre of water used

1 cubic metre = 1000 litres

No Water Meter

A charge of £107 per year

Henry uses an average of 180 litres of water each day.

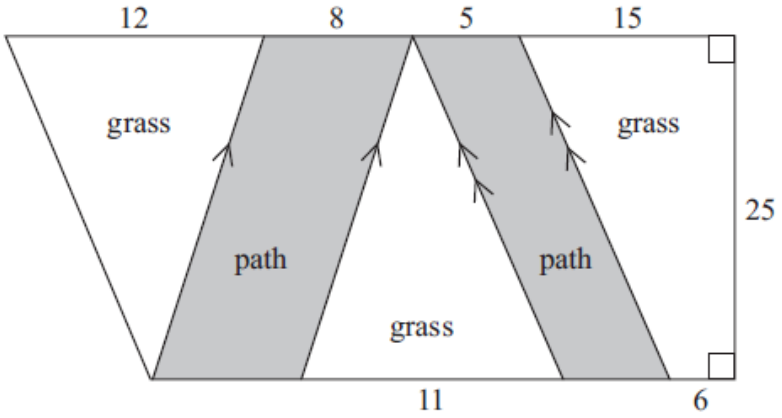
Henry wants to pay as little as possible for the water he uses.
Should Henry have a water meter?

(Total 5 marks)

21. David is planning his garden.

There will be two paths in the garden.
The rest of the garden will be grass.

The diagram shows David's plan for his garden.



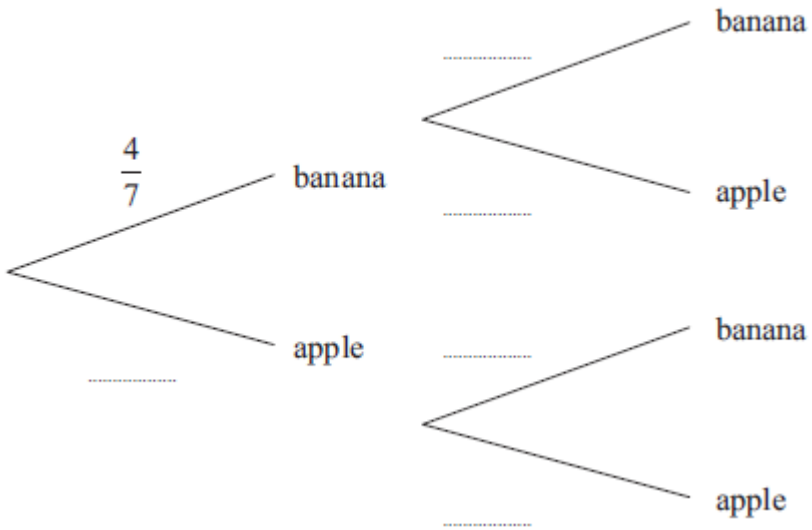
All measurements on the diagram are given in feet.
Work out the total area of the grass.

(Total 4 marks)

22. There are 4 banana smoothies and 3 apple smoothies in a box.

Jenny takes at random 1 smoothie from the box.
She writes down its flavour, and puts it back in the box.
Jenny then takes at random a second smoothie from the box.

(*a*) Complete the probability tree diagram.



(2)

(*b*) Work out the probability that both smoothies are apple flavour.

.....

(2)

(Total 4 marks)

TOTAL FOR PAPER IS 80 MARKS