Write your name here

Surname	Other Names

Mathematics
**2018 Practice Paper
Paper 2 (Calculator)
Foundation Tier**

Time: 1 hour 30 minutes

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

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.

1 Write down the value of the number 4 in the number 3451

....
(Total for question 1 is 1 mark)

2 Ruth buys *p* potatoes and *c* carrots.
Write an expression for the total number of potatoes and carrots Ruth buys.

....
(Total for question 2 is 1 mark)

3 Change 3 hours into minutes.

.................................minutes
(Total for question 3 is 1 mark)

4 Here is a list of numbers.

6   8   10   15   18   25   31

(a) From the numbers in the list, write down a prime number.

....
(1)

(b) From the numbers in the list, write down a square number.

....
(1)

(Total for question 4 is 2 marks)

5 Write down all the factors of 24.

....
(Total for question 5 is 2 marks)

6 Mason wants to buy 6 pens.

Each pen costs 28p

Mason pays with a £10 note.

(a) Work out how much change Mason will get from £10.
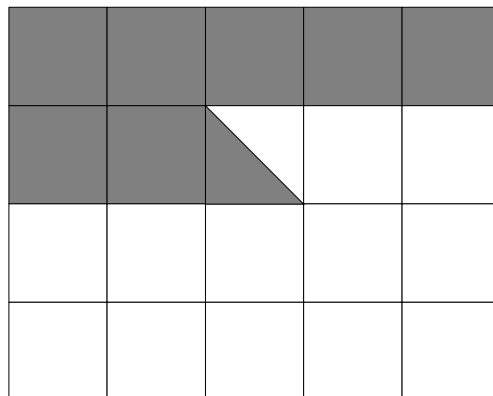
£...............................
(2)

(b) When in the shop Mason finds out that the price of the pens has been reduced.

How does this affect the amount of change he will get?

....

....
(1)

(Total for question 6 is 3 marks)

7 What fraction of this shape is shaded.

....
(Total for question 7 is 2 marks)

8 There are three different options for main course and three different options for dessert.

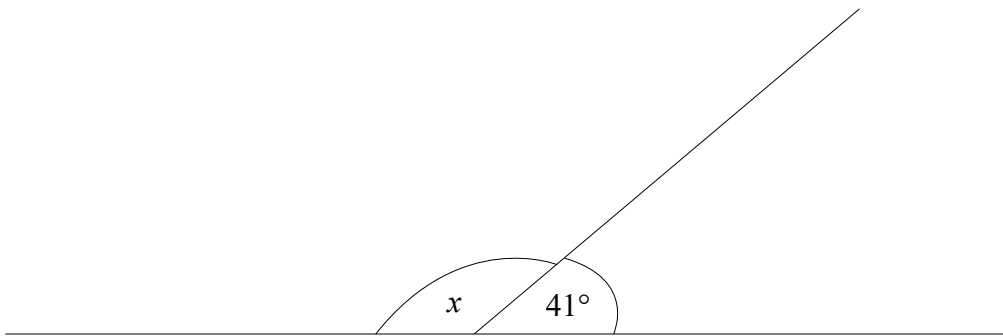| Main	Dessert
Fish and Chips	Fruit Salad
Lasagne	Cheesecake
Vegetable Curry	Ice Cream

(a) List all the different combinations that can be chosen

…..

…..

…..

(Total for question 8 is 2 marks)

9

Find the size of angle marked x.

…........................°

(Total for question 9 is 1 mark)

10 There are 924 people in a theatre.

383 of the people are men.
356 of the people are women.

$\frac{2}{5}$ of the children are boys.

Work out how many girls are in the theatre.

....
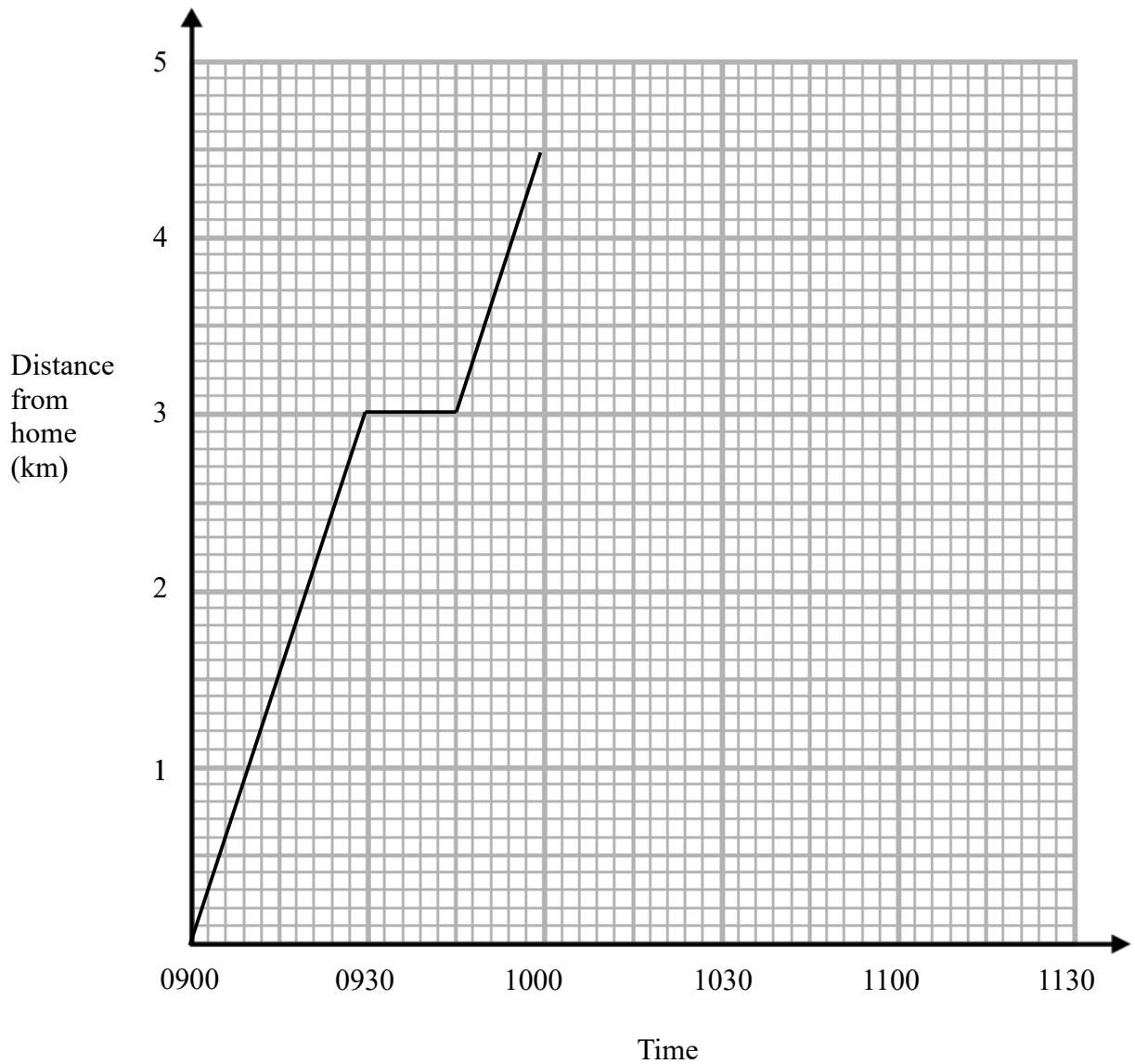
(Total for question 10 is 3 marks)

11 A map has a scale of 1cm to 5km.

The distance between London and Dover is 60 km.

What is the distance on the map between London and Dover?

…..........................cm

(Total for question 11 is 2 marks)

12 On Monday Matt delivered some parcels.
The travel graph represents the first hour of Matt's journey.

(a) What time did Matt start his journey?

…...........................
(1)

Matt stopped to deliver a parcel.
(b) What was the distance between Matt's house and his first stop?
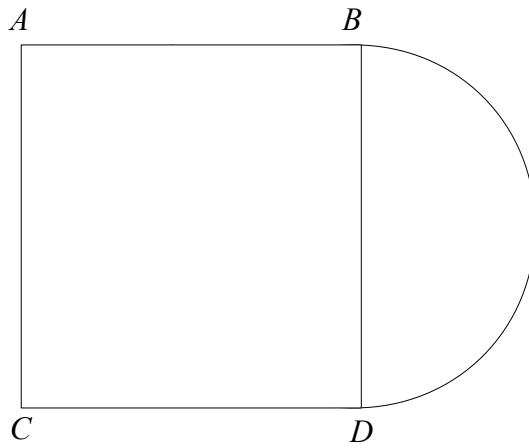
…...........................
(1)

Matt stopped at 1000 for 30 minutes to deliver a parcel. He then returned home at a steady speed.
Matt got home at 1115
(c) Complete the travel graph to show this information.

(2)

(Total for question 12 is 4 marks)

13

A _____ B

C _____ D

An area is formed by a square, *ABCD*, and a semi circle.
BD is the diameter of the semi circle.
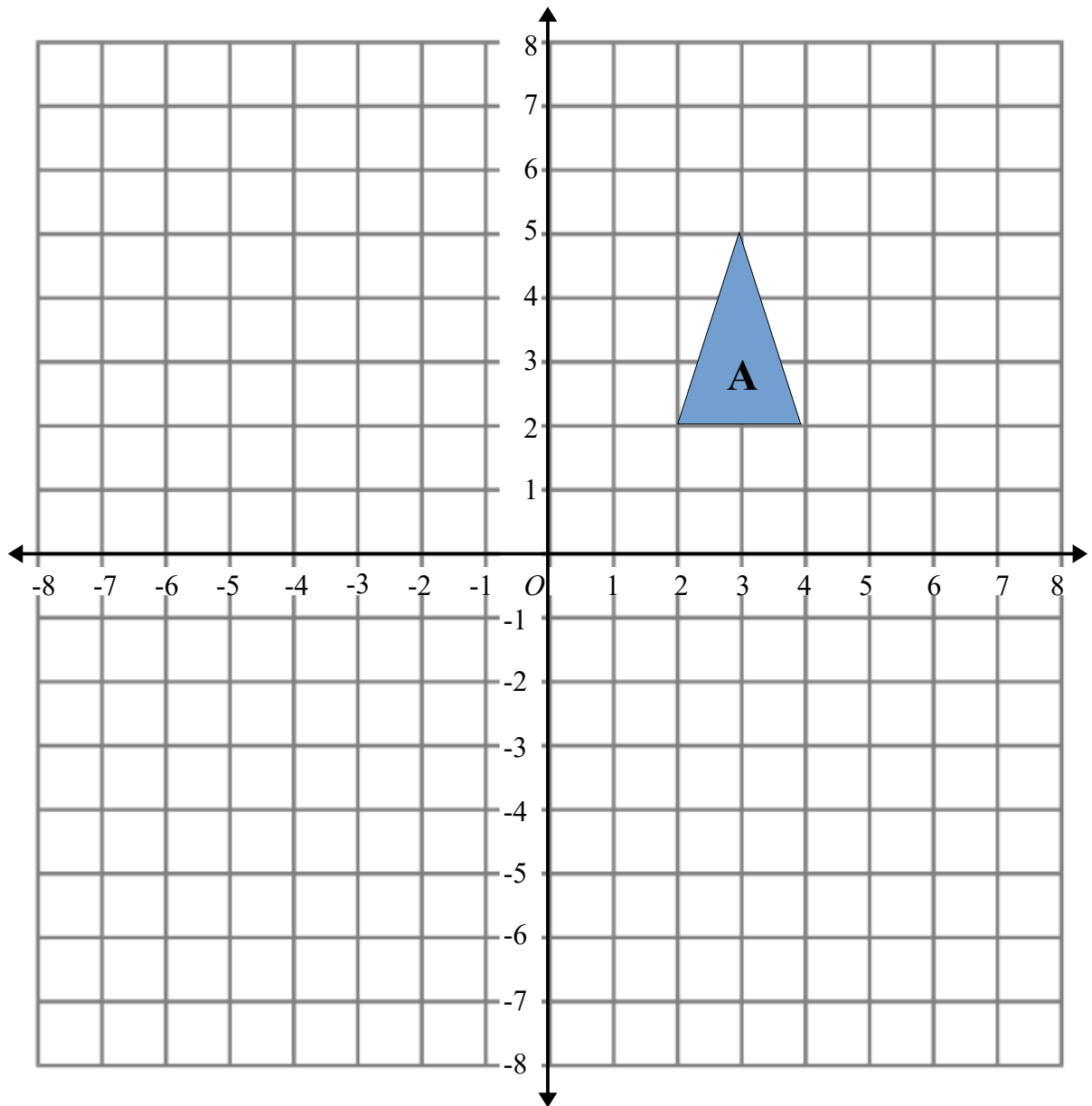
The radius of the semi circle is 4m.

The area is going to be covered completely with lawn seed.

A box of lawn seed covers 25 m².

How many boxes of lawn seed will be needed?
You must show your working.

…........................

(Total for question 13 is 5 marks)

14

Rotate triangle **A** 90º clockwise, centre *O*.

(Total for question 14 is 2 marks)

15 Here are the first 6 terms of a Fibonacci sequence.

1   1   2   3   5   8

Find the 8th term of this sequence.

…..........................

(Total for question 15 is 3 marks)

16 The table shows information about the number of points scored in a game.

Points	Frequency
0	10
1	12
2	20
3	7
4	4
5	1

Work out the mean number of points per game.

…........................

(Total for question 16 is 3 marks)

17 In a box there are black pens, red pens and green pens.
The ratio of black pens to red pens to green pens is 8:3:2

There are 18 red pens in the box.
How many black and green pens are in the box?

Black …........................

Green …........................

(Total for question 17 is 3 marks)

18 Brian bought a hat in France. He paid €45.
The same hat in England costs £39.99.

The exchange rate is £1 = €1.12

Is the hat cheaper in France or in England?
You must show your working.

(Total for question 18 is 3 marks)

19 n is an integer such that $-3 < 2n < 6$
Write down all the possible values of n.

….......…..

(Total for question 19 is 2 marks)

20 Here are a list of ingredients for making 16 mince pies.

> 260g Butter
> 375g Flour
> 125g Sugar
> 600g Mincemeat

Elaine wants to make 72 mince pies.

How much of each ingredient will Elaine need?

butter ….......................... g

flour ….......................... g

sugar ….......................... g

mincemeat ….......................... g

(Total for question 20 is 3 marks)

21 There are only red counters, blue counters, yellow counters and black counters in a bag.

The table shows the probabilities of picking at random a red counter and picking at random a black counter.

Colour	red	blue	yellow	black
Probability	0.22			0.34

The probability of picking a blue counter is **twice** the probability of picking a yellow counter.

Find the probability of picking a blue counter.

…..........................

(Total for question 21 is 2 marks)

22 A number y is rounded to 1 decimal place.

The result is 5.8

Write down the error interval for y.

....

(Total for question 22 is 2 marks)

23 It takes 5 machines 6 hours to produce 1000 DVDs

Work out how long it would take 4 machines to produce 1000 DVDs.

…........................

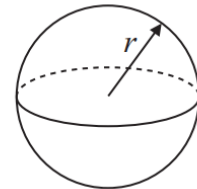**(Total for question 23 is 2 marks)**

24 A sphere is carved from a block of wood.
The sphere has a radius of 5cm.

The density of the wood is 0.85 g/cm^3

Find the mass of the sphere.
Give your answer to 3 significant figures.

$$\text{Volume of sphere} = \frac{4}{3}\pi r^3$$

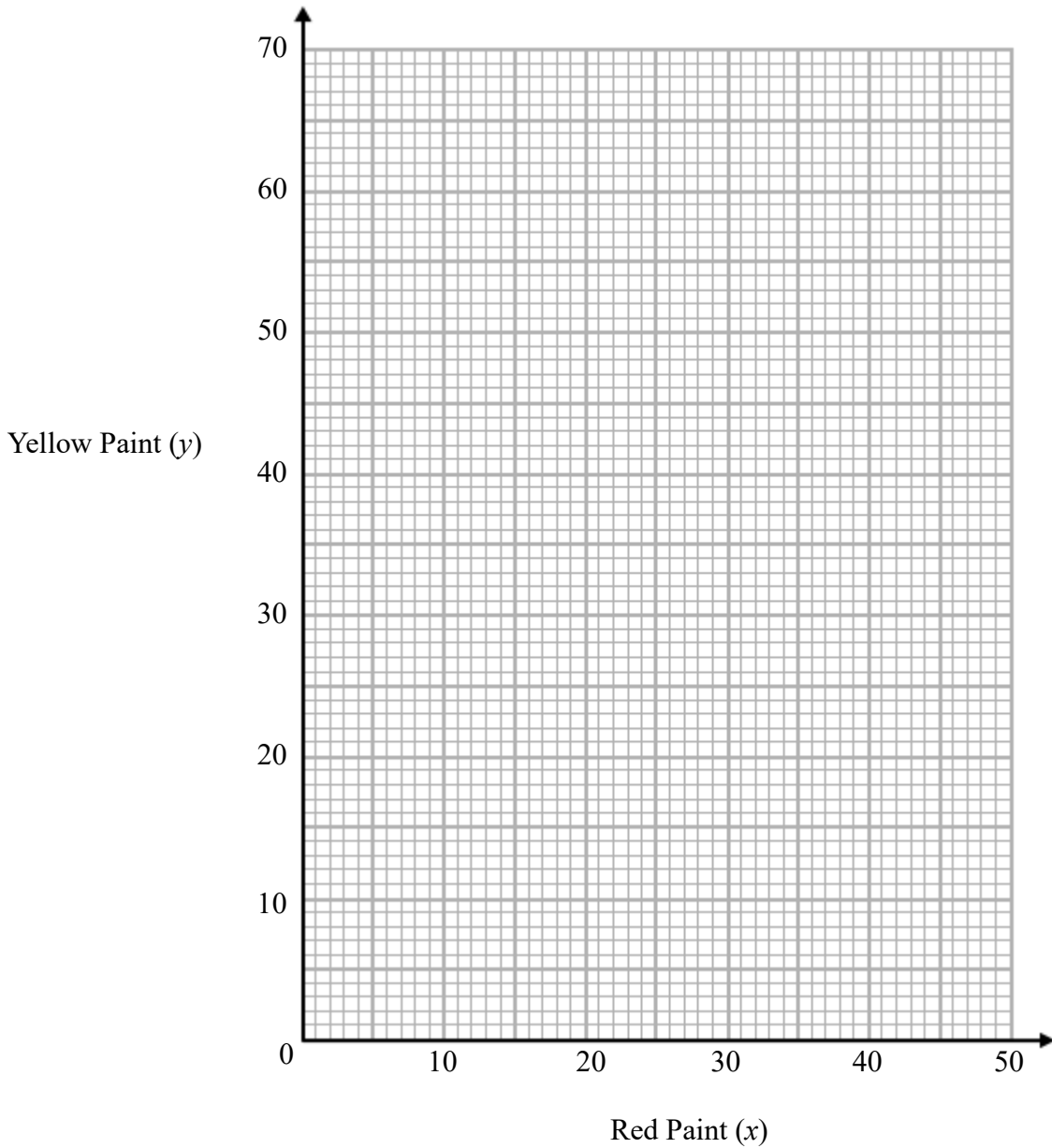$$\text{Surface area of sphere} = 4\pi r^2$$

…........................g

(Total for question 24 is 3 marks)

25 An artist is making orange paint by mixing red paint (x ml) and yellow paint (y ml) in the ratio 8:11

(a) Use this information to draw a graph showing the relationship between the amount of red paint and the amount of yellow paint used.
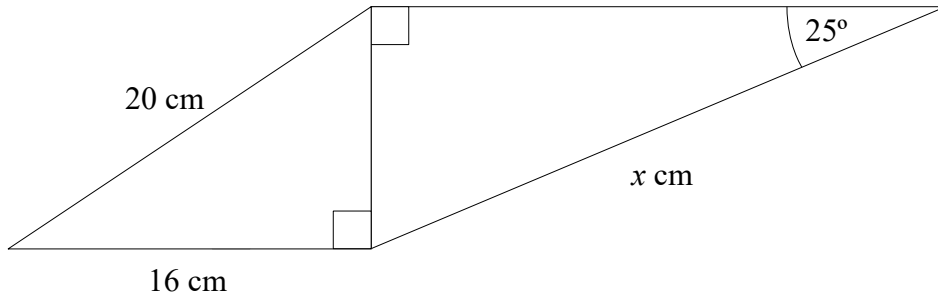

Yellow Paint (y)

Red Paint (x)

(2)

(b) The artist decides to use 50ml of yellow paint. Use your graph to work out how much red paint he should use.

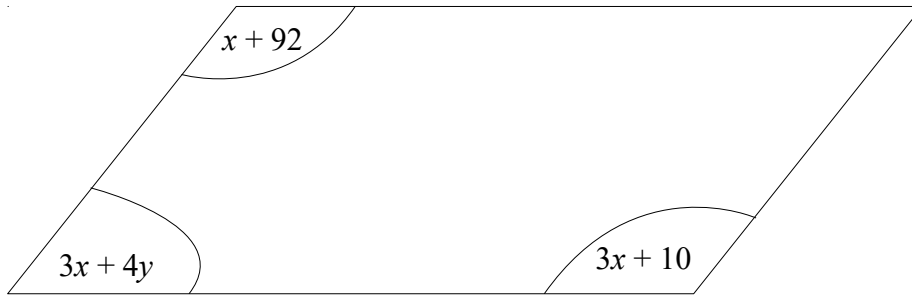…........................ml

(2)

(Total for question 25 is 4 marks)

26

20 cm

25º

16 cm

x cm

Work out the value of x.
Give your answer to 1 decimal place.

…..........................

(Total for question 26 is 4 marks)

27

The diagram shows a parallelogram

All of the angles are in degrees.

Find the value x and the value of y.

$x =$ …..........................

$y =$ …..........................

(Total for question 27 is 3 marks)

28   Solve the simultaneous equations

$$2x - 3y = 4$$
$$4x - y = 13$$

$x =$ …..........................

$y =$ …..........................

(Total for question 28 is 3 marks)

29 (a) Write 56800000 in standard form.

....
(1)

(b) Work out the value of $(9 \times 10^6) \div (4 \times 10^5)$

....
(2)

(Total for question 29 is 3 marks)

30 Charlie invests £2500 for 3 years in a savings account.
She gets 3% per annum compound interest.

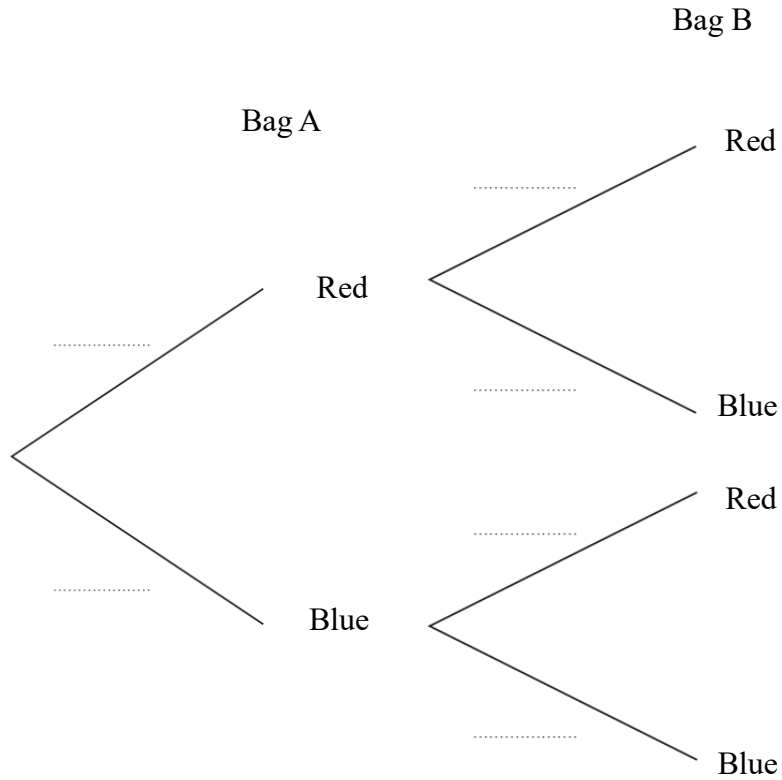How much money does Charlie have at the end of 3 years.

£.............................

(Total for question 30 is 2 marks)

31 Harry has two bags of counters, Bag A and Bag B.

There are 5 red counters and 3 blue counters in bag A.
There are 4 red counters and 5 blue counters in bag B.

Harry takes at random a counter from each bag.

(a) Complete the probability tree diagram.

Bag B

Bag A

Red

Red
....

Blue
....

....

Red
....

Blue

Blue
....

....

(2)

(b) Work out the probability that Harry takes two blue counters.

…..........................

(2)

(Total for question 1 is 4 marks)