Revision Booklet

Functional Skills Level 2 September-December

QUESTIONS TO GO WITH YOUR LESSONS

Name:

Vocational Course:

Contents

Source	Targets	Evidence Or Page numbers	Complete date

Source	Targets	Evidence	Complete date

MK College Group

Non calculator

Number

1. Write numbers in increasing order starting with the smallest. (1)

10010 11010 10001 11100 11011

2. Put these numbers in order of size starting with the smallest (1)

9303 8481 8999 999 1011

3.

Ireland	Wales	Scotland	England
9223	8029	9301	8803

Put the points scored in order, starting with the lowest (1)

4. Write these numbers in order of size. Start with the smallest number.

(1)

a) 9, -4, -7, 2, -5

b) Find the difference in points scored between the highest and lowest amounts. (1)

5. Using the information that

$$42 \times 31 = 1302$$

write down the value of

$$42 \times 62$$ (1)

6. Using the information that

$$84 \times 264 = 22176$$

write down the value of

$$8.4 \times 26.4 \qquad (1)$$

7. a) Write the number 3804 in words (1)

b) Write the number 'Ten thousand, two hundred and fifty-one' in figures. (1)

8. At a Bath rugby match, there were 13,912 spectators. (1)

Write 13,912 in words

9. Arrange these numbers in order of size, starting with the smallest. (2)

One Billion

Half a million

Six hundred and ten thousand

Ninety-seven thousand

Two million

10. Write these numbers in order of size. Start with the largest number.

(1)

9 -5 1 -13 12

Notes

Number

BIDMAS

Non- Calculator

1. a) Calculate 16 – 5 x 2

Write your answer in the box below. (1)

b) $10 - 3^2$

Write your answer in the box below. (1)

c) 5 x (2 + 3)

Write your answer in the box below. (1)

2. a) Calculate 10 + 3 x 2

Write your answer in the box below. (1)

b) 8 ÷ 2 + 12 ÷ 4

Write your answer in the box below. (1)

c) 3 x 10 ÷ 5 – 1

Write your answer in the box below. (1)

3. a) Calculate $6 + 6 \div 3$

Write your answer in the box below. (1)

b) $8 + 3(5 - 1)$

Write your answer in the box below. (1)

c) $9 \times 2 + 20 \div 2$

Write your answer in the box below. (1)

4. Put brackets in the following statements to make them true.

a) $6 \times 7 + 3 - 8 = 52$ (1)

b) $4 + 3 \times 7 - 1 = 42$ (1)

5. a) Work out $14 + 12 \div 2$

Write your answer in the box below. (1)

6. a) Work out $2^3 + 3^2$

Write your answer in the box below. (1)

b) Work out $6 \times 4 - 7 \times 3$

Write your answer in the box below. (1)

7. Work out $(2 + 5)^2$ (1)

Write your answer in the box below

b) $2^2 \times 3^3$

Write your answer in the box below. (2)

8. a) Work out (9 + 4) x (100 ÷ 25)

Write your answer in the box below. (1)

b) 5 + 3 x 6

Write your answer in the box below. (1)

c) 30 – 5 x 2

Write your answer in the box below. (1)

9. Joey thinks the answer to 16 + 4 x 2 is 40.

Albert thinks the answer to 16 + 4 x 2 is 24.

Who is correct?

Explain your answer in the box below. (2)

10. a) Work out 4 x (3 + 17)

Write your answer in the box below. (1)

b) $10 – 2 \times 5$

Write your answer in the box below. (1)

c) $22 – 14 \div 2$

Write your answer in the box below. (1)

Notes

Fractions

1. Write down the largest of these fractions.

$\frac{3}{5}$ $\frac{11}{20}$ $\frac{1}{2}$

Show your working and write your answer in the box below. (2)

2. Write these fractions in order of size

Start with the smallest number.

$$\frac{7}{10} \qquad \frac{3}{4} \qquad \frac{1}{2} \qquad \frac{3}{5}$$

Show your working and write your answer in the box below. (2)

3. Arrange these fractions in order, smallest first.

$$\frac{2}{3} \qquad \frac{7}{9} \qquad \frac{5}{6} \qquad \frac{11}{18}$$

Show your working and write your answer in the box below. (2)

4. A football team wins 3/8 of their matches in a season.

The same team loses 1/3 of their matches.

Show that the team win more matches than they lose in the box below. (2)

....

5. Work out, as a simplified fraction.

$$\frac{3}{4} - \frac{2}{5}$$

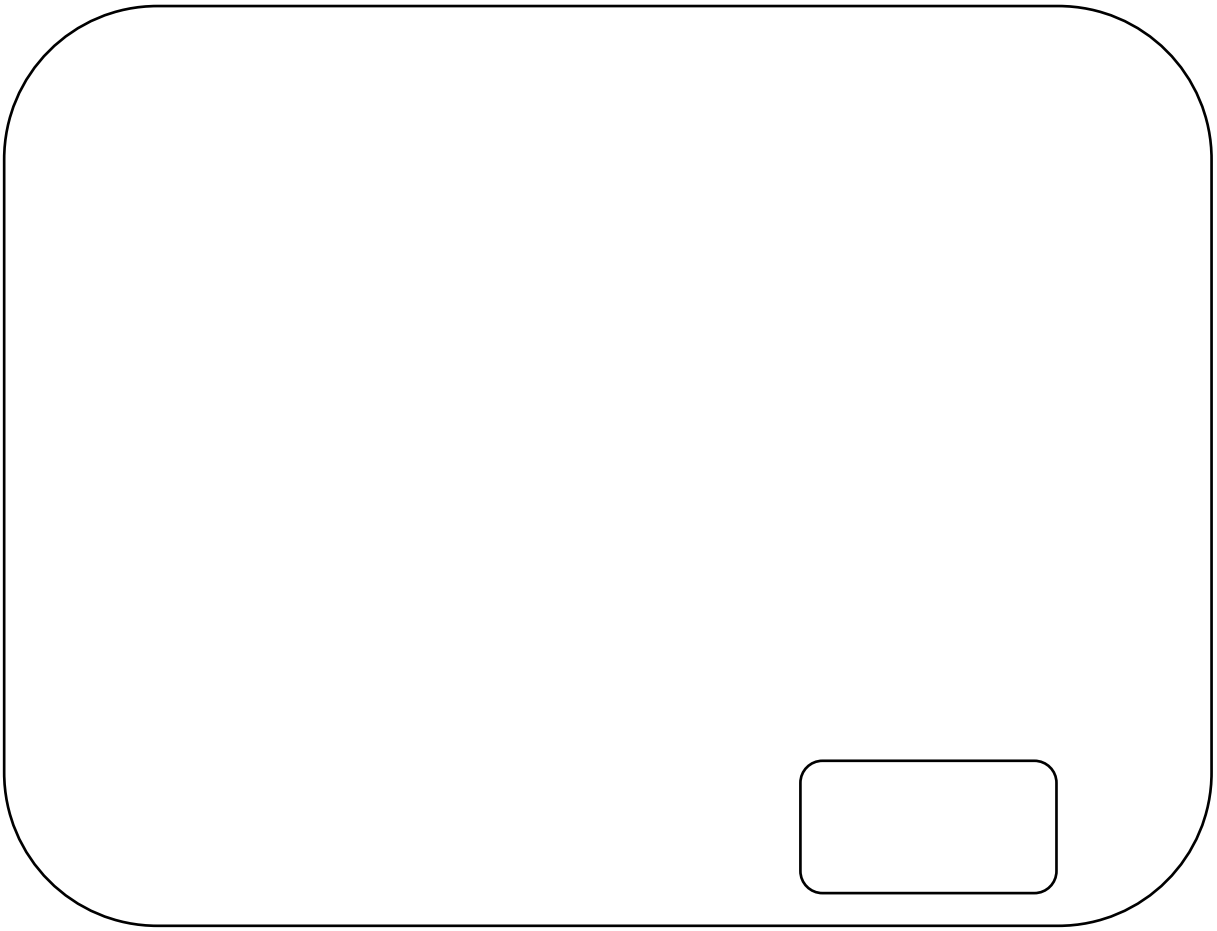
Show your working and write your answer in the box below. (2)

....

6. Work out, as a mixed number

$$\frac{7}{11} + \frac{2}{3}$$

Show your working and write your answer in the box below. (2)



Fractions

7. Work out $1\frac{2}{5} + 2\frac{1}{2}$

Give your answer as a mixed number.

Show your working and write your answer in the box below. (3)

,

8. Work out $4\frac{1}{3} - 3\frac{4}{9}$

Give your answer as a fraction.

Show your working and write your answer in the box below. (3)

Fractions

9. Matthew is training for a race.

He runs 3 days in one week.

Matthew runs $1\frac{1}{2}$ miles on Monday.

Then he runs $1\frac{2}{3}$ miles on Thursday.

Finally, he runs $2\frac{1}{5}$ miles on Sunday.

Work out how far Matthew ran in total.

Show your working and write your answer in the box below (3)

10. Out of 500 people, 100 wear glasses.

Write the number of people who do not wear glasses as a fraction of the total number of people.

Give your answer in its simplest form.

Show your working and write your answer in the box below. (2)

.....miles

11. There are 400 pupils in a primary school.

Of the 400 pupils, 88 play a musical instrument.

Express the number of pupils who play a musical instrument as a fraction of the 400 pupils.

Give your answer in its simplest form.

Show your working and write your answer in the box below. (2)

12. Express 50p as a fraction of £4.

Give your answer in its simplest form.

Show your working and write your answer in the box below. (2)

13. Express 50p as a fraction of £4.

Give your answer in its simplest form.

Show your working and write your answer in the box below. (2)

14. In a bag there are 80 beads

There are 35 yellow beads.

There are 17 red beads.

The rest of the beads are white.

Work out what fraction of the beads are white.

Give your answer in its simplest form.

Show your working and write your answer in the box below. (2)

Notes

Formulae

1. Leo is an artist.

He needs to produce a painting for the opening of a new housing estate.

Leo is going to construct a symmetrical canvas for his painting. He makes a sketch of the frame for the canvas.

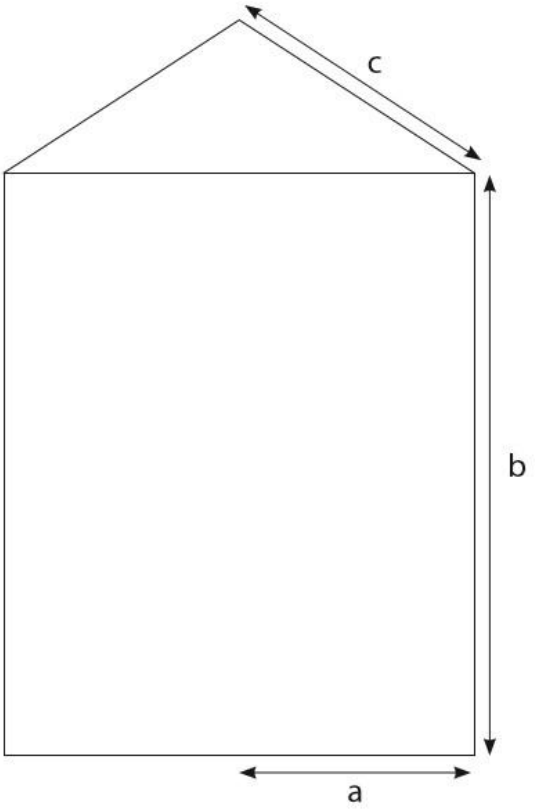


Diagram **not** accurately drawn

Leo uses this formula to work out the total length, L mm, of the wood he needs for the frame.

$$L = 2(b + c) + 4a$$

$a = 420\,mm$

$b = 1130\,mm$

$c = 580\,mm$

He has a 4.8m length of wood for the frame.

Is 4.8m enough wood for the frame?
Show why you think this. (4)

Formulae

Formulae

2. Jane plans to make some improvements to her garden.

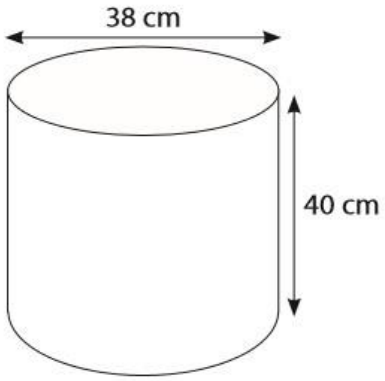
She has a plant pot in the shape of a cylinder. The pot has diameter 38cm and height 40cm.

Jane wants to completely fill the pot with compost. Compost is sold in 20 litre bags.

Jane uses this formula for the volume of the cylinder.

$V = 0.8d^2h$

V is the volume in cm^3
d is the diameter in cm
h is the height in cm



1 litre = $1000cm^3$

Jane thinks she needs 2 bags of compost to completely fill the pot.

Are 2 bags of compost enough to fill the pot?
Show a check of your working. (5)

Formulae

Formulae

3. Amir visits the gym.

He wants to find out his Body Mass Index (BMI).

Amir uses this formula to work out his BMI.

BMI = $\frac{M}{H^2}$

where M is mass (kg), H is height (m)

Amir has mass 83.3kg and height 1.75m.

A healthy BMI is between 18.5 and 25.0

Does Amir have a healthy BMI?
Show why you think this. (3)

Formulae

4. Freya wants to compare food storage methods between the UK and the USA.

She compares the temperature at which frozen meals are stored in the UK with the temperature at which they are stored in the USA.

Temperature is measured in degrees Fahrenheit in the USA.

Freya knows this formula.

$$F = 1.8C + 32$$

F is the temperature in degrees Fahrenheit
C is the temperature in degrees Celsius

Frozen meals are stored at $-20℃$ in the UK.

Convert $-20℃$ to degrees Fahrenheit.

Show a check of your working. (3)

5. Companies can rent the units in the commercial centre for 3, 6 or 12 months.

Jill has this data about the units rented in 2016

		Number of units rented in 2016		
Length of rental		3 months	6 months	12 months
Unit size	small	10	7	5
	medium	3	8	6
	large	2	1	11

Jill needs to work out the yearly rental rate for the large units in 2016
She uses this formula

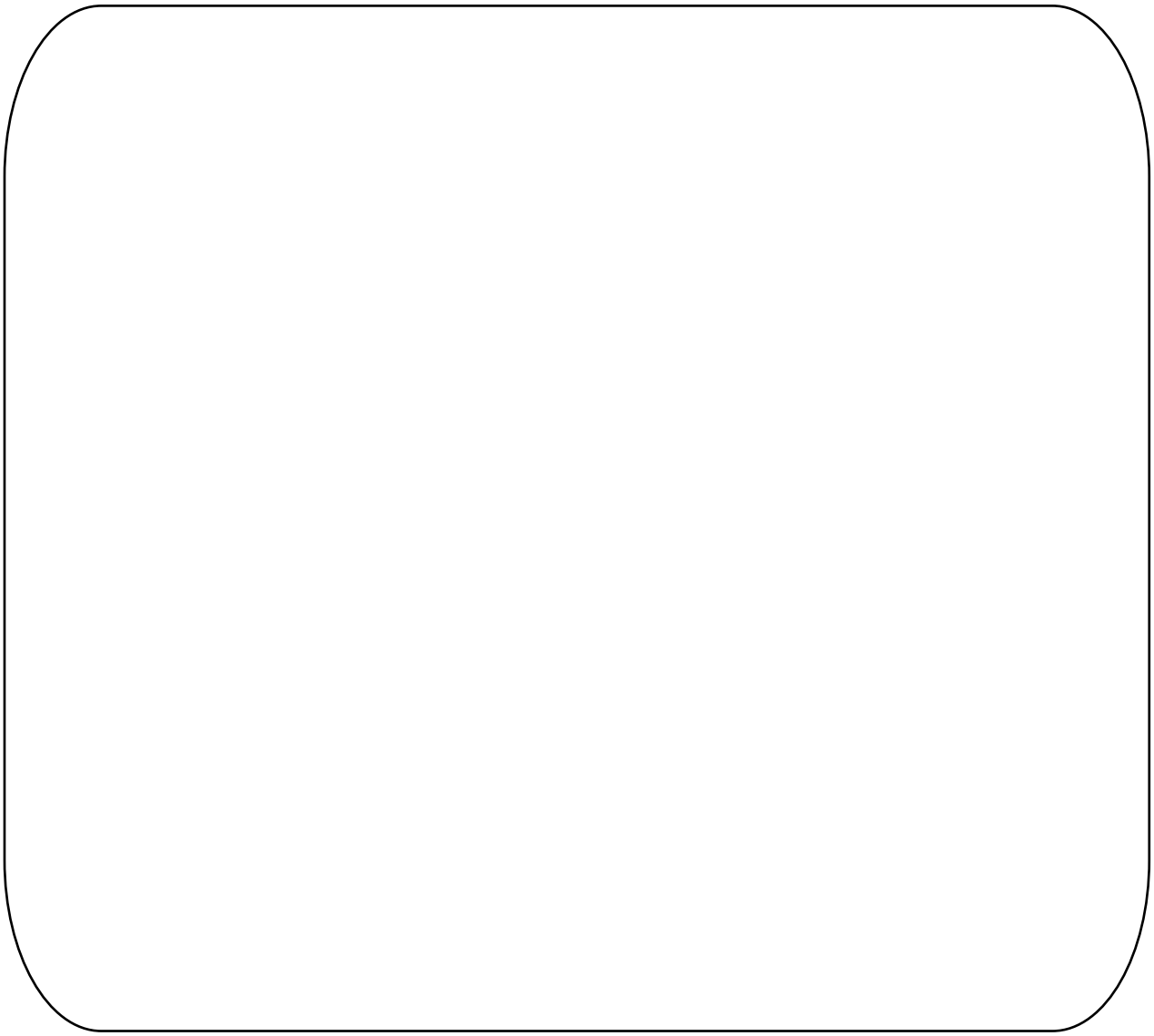
$$R = \frac{N}{168} \times 100$$

R = yearly rental rate for the large units (%)
N = total number of months the large units are rented for in 2016

Jill thinks the yearly rental rate for the large units in 2016 was more than 85%.

Is Jill correct?
Show why you think this. (3)

Formulae



Formulae

6. Barney has a gas oven.

He sets the temperature of the oven by using gas marks.

Barney uses this formula to convert $180°C$ to the gas mark required.

$$G = \frac{(T - 121)}{14}$$

G is gas mark

T is temperature in °C

Barney thinks gas mark 6 is the same as $180°C$.

Is Barney correct?
Show why you think this. (2)

Formulae

7. Manraj works as a lifeguard at the pool.

The manager at the pool uses this formula to work out the total pay for Manraj.

$$P = 5.8h + 8.7t$$

P = total pay (£)
h = number of contract hours worked
t = number of hours of overtime worked

Manraj works at the pool for 112 contract hours and 28 hours of overtime in July.

He always puts 1/3 of his total pay in a savings account each month.

Manraj thinks he needs to put over £300 of his total pay in his savings account in July.

Is Manraj correct?
Show why you think this. (4)

8. Tomas has built a raised flower bed in his garden.
He is going to fill the flower bed with compost.

Tomas uses this formula to work out the amount of compost he needs to fill the flower bed.

$P = 3.14 \times r^2 \times d$

r = radius of flower bed (cm)

d = depth of flower bed (cm)

P = amount of compost (cm^3)

The flower bed has

a. radius 80cm
b. depth 28cm.

He sees this special offer.

Special Offer

50-litre bags of compost

£5.69 per bag

Buy 10 or more bags and save £0.50 per bag

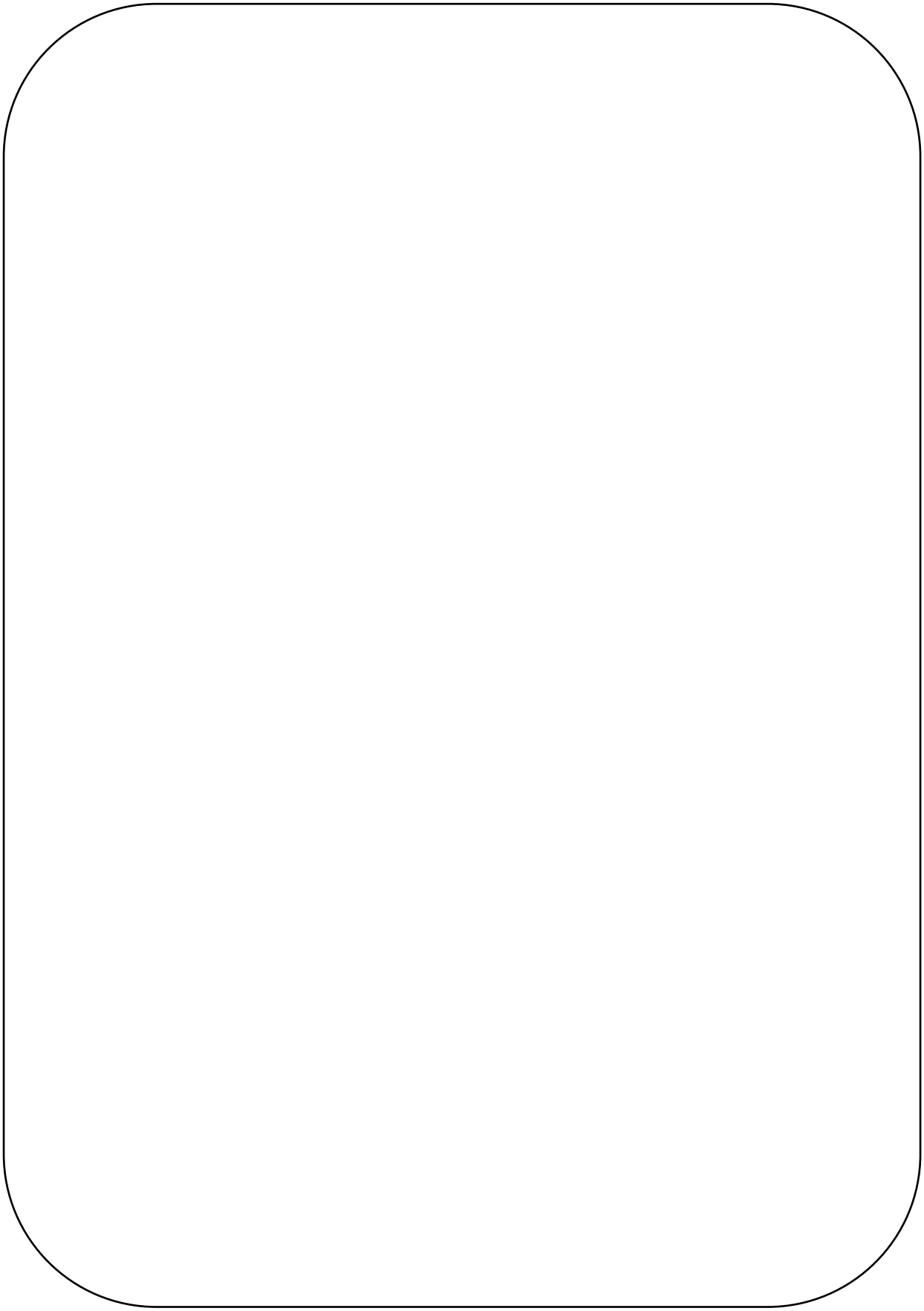
Buy 30 or more bags and save £0.85 per bag

Buy 60 or more bags and save £1.14 per bag

Tomas knows that 1 litre = $1000cm^3$.

Work out how much it will cost Tomas to buy all the bags of compost he needs. (6)

Formulae



Notes

Formulae

Formulae

Ratio and Proportion

Non calculator questions

1. Rita is the manager of a store.
She needs the ratio of morning staff to afternoon staff to be 3:2
Rita can employ a total of 160 staff.

(a) How many morning staff and afternoon staff should Rita employ? (3)

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

Lucy and Amra work as salespeople in Rita's store.

Here are the sales figures for Lucy for the last 6 months.

£18 600 £19 120 £14 160 £21 650 £20 300 £15 940

Amra has a mean average sales figure of £19 065 for the last 6 months.

(b) Who has the better mean average?
Show a check of your working. (3)

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

Calculator questions

2. The company also advertises its products in France.

One French website charges €195 per advert.
The company buys 5 of these adverts.

The exchange rate is £1 = 1.1025 euros.

What would be the total cost of the 5 adverts in pounds?

(3)

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

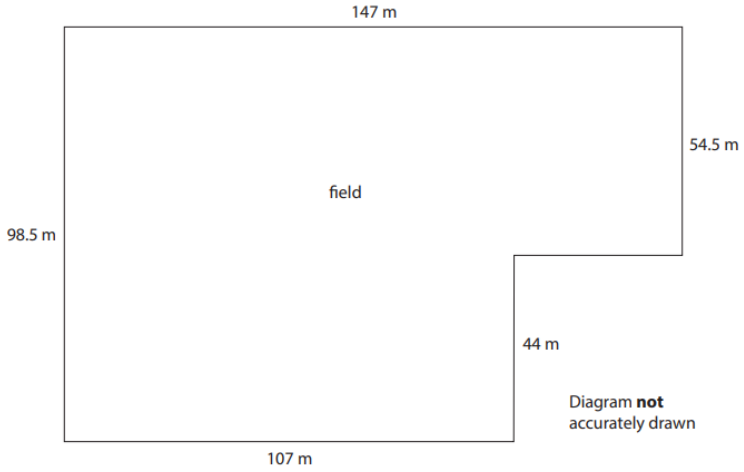
3. Martin is a farmer.
He wants to keep sheep in one of his fields.
The field is shown in the diagram below.

Martin wants to put fencing around the perimeter of the field.
He needs to leave a 3 m gap for a gate.

Martin has 500 metres of fencing.

(a) Does Martin have enough fencing?

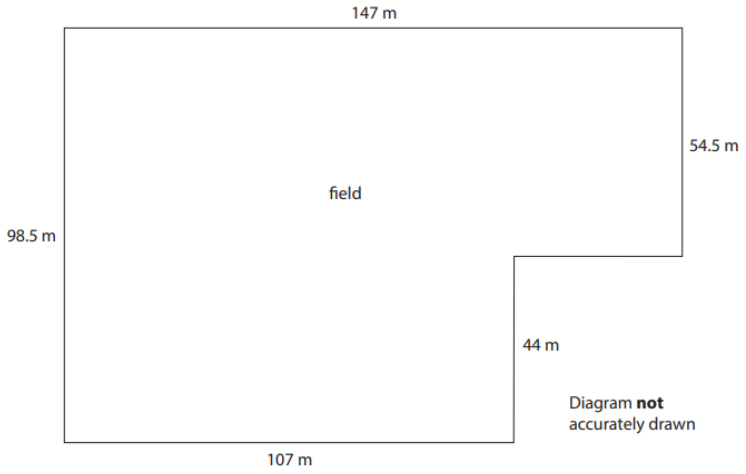
(4)



b) Martin finds out he can keep 6 sheep per acre on this field.
He wants to know the total number of sheep he can keep on this field.
Use 1 acre = 4050 m^2

(b) How many sheep can Martin keep on this field?

(6)



4. Andy is a keen gardener.

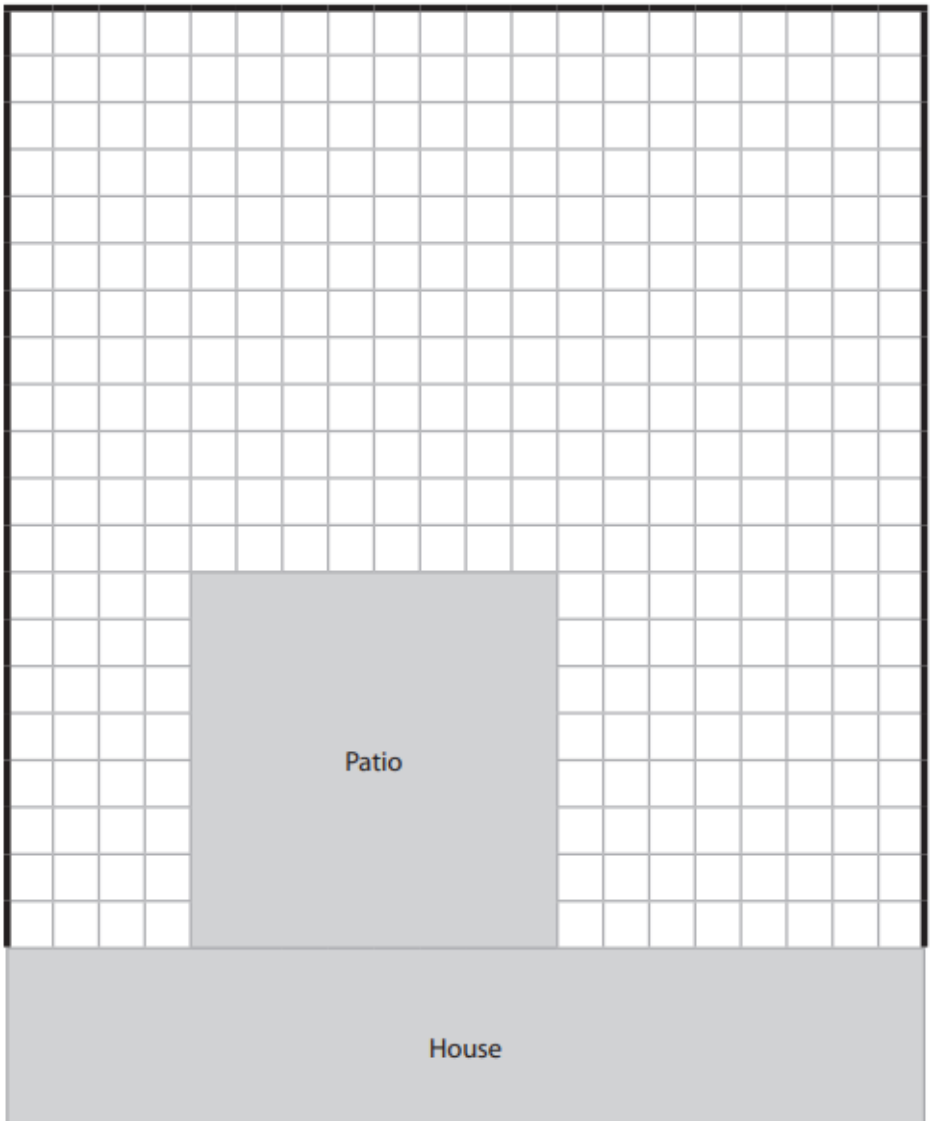
He wants to put a shed in a corner of his garden.

The shed is rectangular 2.5 m by 1.75 m.

He also wants a rectangular vegetable patch with an area of $6m^2$.

Andy draws a plan of his garden on a grid.

Draw and label the shed and the vegetable patch on the grid.
Remember to use the scale in the key. (4)



Key: 1 square on the plan is 25 cm by 25 cm in the garden

Fence

Notes

Decimals

Non Calculator questions

1 On Thursday evening Malcolm's bank balance was –£107.35

On Friday morning
- £1867.68 is paid into his bank account
- £715.21 is paid out of his bank account.

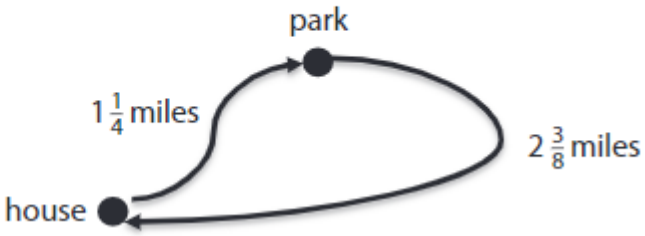
No other payments occur.

Work out how much money is in Malcolm's bank account on Friday evening.

(3)

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

2. Ola will run from her house to a local park and back to her house.
She sees this sketch of the route she will take.



What is the total distance of the route Ola will run?
Give your answer as a mixed number.

You **must** show your working.

(3)

Calculator questions

1. Samya is building a fence for an extra car park near the football match.

The car park is rectangular with a 3 m gap for the entrance.
Here is a sketch of the car park.

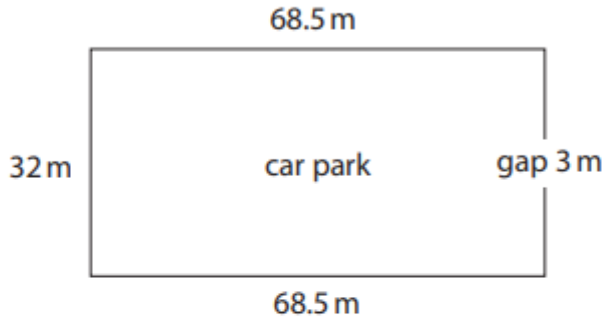


Diagram **not** accurately drawn

Samya has 4 rolls of fencing.
Each roll is 50 m long.

The fencing can be cut and joined together.

Are 4 rolls of fencing enough for this car park?
Show a check of your working. (4)

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

Write your check in the box below.

2. Jean needs to buy a new oven for the bakery.

She finds these two offers for the same oven.

Grillo	**Oven World**
24 monthly payments of £249.99	First payment £2498.99
	18 payments of £185.99
£180 delivery fee	£120 delivery fee
Order today, delivery in 3 days	Order today, delivery in 2 weeks

Jean wants to pay the cheapest price for the new oven.

Which offer should Jean choose?
Show why you think this. (5)

3. Don is organising a comedy night for charity.
He is going to sell food at the comedy night.

Here is the price list.

Price list

Slice of pizza	£2.75
Hot dog	£1.25
Hamburger	£1.95
Sandwich	£2.25
Chips	£1
Cake	£1.45

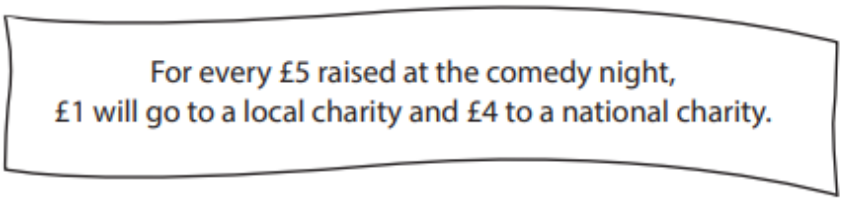
Don uses these instructions to work out how much money he can expect to make by selling food at the comedy night.

> Work out the mean average price of all the items in the price list.
> Multiply this mean average price by 80

Don thinks he can expect to make at least £140

(a) Can Don expect to make at least £140 by selling food at the comedy night?
(4)

Don hangs this banner up at the comedy night.



The table shows the amount of money raised from different activities at the comedy night.

	Ticket sales	**Food sales**	**Drink sales**	**Raffle**
Amount of money raised	£400	£100	£250	£50

Don thinks he should give £600 to a national charity.

(b) Is Don correct?
Show why you think this. (4)

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

4. Aziz needs to go from Rome to Naples and back by train.
He looks at the train timetable.

Rome (departure time)	Naples (arrival time)	Price (euros)
08:49	10:36	39.90
09:12	10:32	24.90
09:28	11:32	36.50
10:10	11:20	28.90
10:23	11:30	35.90
10:57	12:05	39.90

Naples (departure time)	Rome (arrival time)	Price (euros)
16:40	17:50	47.90
17:10	18:20	44.90
17:31	19:39	36.90
17:55	19:02	27.90
18:30	19:37	38.90
18:31	20:34	27.50

Aziz will leave his hotel in Rome after 9 am.
He allows 25 minutes to get from the hotel to the train station in Rome.

In Naples Aziz will spend
- at least 4 hours in meetings
- 1.5 hours for lunch.

Aziz needs to be back at his hotel in Rome by 8 pm.
He needs to buy the cheapest train tickets possible.

(a) Which train from Rome to Naples and which train from Naples to Rome should Aziz take? (3)

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

5. Kirsty is going to organise a birthday party for her daughter.

She makes these notes about two party options.

Village hall

Hire the hall for 3 hours at £30 per hour

Entertainer fee – £150

Lunch – £6.80 per child

Party bags – £2.29 for 6 bags

Princess party

Includes venue hire, entertainer and party bags

£299 (for up to 15 children)

Lunch – £4.49 per child

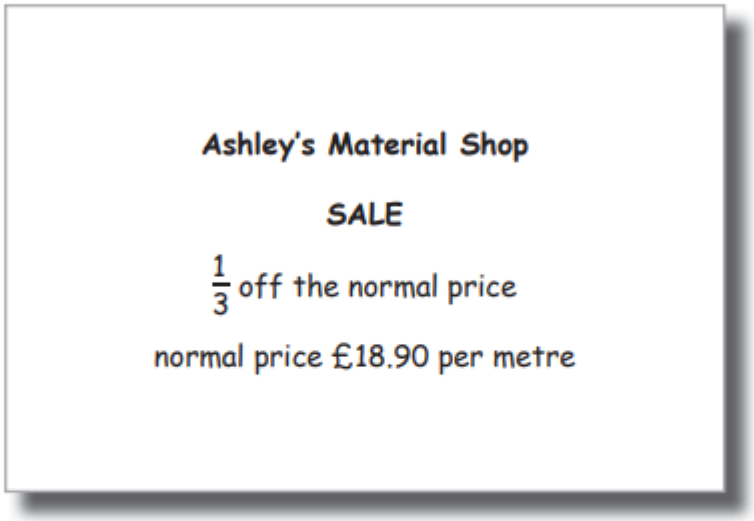
There will be a total of 12 children at the party.

Kirsty has a budget of £400 for the party.

Which option should Kirsty choose for the party?
Give a reason for your answer with figures. (6)

6. Jane is going to make new dresses for the women in the dance group.
She goes to Ashley's to buy some material.

The material is on sale.



Jane plans to make 12 dresses.
She needs to buy 2.5 metres of material for each dress.

Jane has a budget of £350

(a) Can Jane afford to buy all the material she needs?

(4)

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

7. The dancers use sticks in some of the dances.
Jane needs some ribbon to tie on the sticks.

She needs to buy enough ribbon for 20 sticks.

Each stick has 8 pieces of ribbon.
Each piece of ribbon is 30 cm long.

The ribbon is sold in rolls.

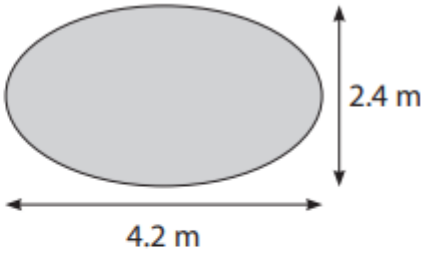
Each roll has 25 m of ribbon.

(b) How many rolls of ribbon does Jane need to buy?

(3)

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

8. Carlos wants to build a pond in his garden.



He digs a hole for the pond

- 4.2 m long
- 2.4 m wide
- 75 cm deep.

Carlos wants to buy a liner for the pond.
He finds this formula to work out the dimensions of the liner he needs.

$$L = 2d + p$$
$$W = 2d + t$$

L = length of liner (m)
W = width of liner (m)
d = depth of pond (m)
p = length of pond (m)
t = width of pond (m)

Carlos sees three different pond liners in a garden centre.

Liner	Dimensions
A	5.5 m by 4 m
B	5 m by 5 m
C	6.5 m by 4.5 m

(a) Which liner should Carlos buy?
Show why you think this. (3)

Carlos needs to buy equipment for his garden pond.

Pond equipment	
Pond liner	£240.99
Water pump	£74.98
Water filter	£79.99
Cables	£18.98

He needs to buy 2 cables and 1 of each of the other items.

Carlos uses a voucher for $\frac{1}{5}$ off the cost of the pond liner.

(b) How much will Carlos pay in total?
Show a check of your working. (4)

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

Use the box below to show your check.

Carlos lines the pond and needs to fill it with water.

He works out the pond will hold 5900 litres of water.

Carlos knows

- the rate of flow of water from his garden hose is 10 gallons per minute
- 1 gallon is 4.5 litres.

He thinks it will take about 2 hours to put 5900 litres of water into the pond.

(c) Is Carlos correct?
Show why you think this. (4)

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

9. Pat and Chris are going on holiday to Tenerife.
The time in Tenerife is the same as the time in London.

Pat finds this information on the internet.

London to Tenerife		
Flight number	**Departure time**	**London airport**
A101	06 45	Stansted
A102	07 35	Gatwick
A103	11 50	Stansted
A104	13 10	Gatwick
A105	13 45	Luton
A106	14 10	Luton
A107	16 40	Gatwick

Tenerife to London		
Flight number	**Departure time**	**London airport**
B201	11 50	Stansted
B202	12 45	Gatwick
B203	16 25	Stansted
B204	18 10	Luton
B205	18 30	Gatwick
B206	19 35	Luton
B207	21 50	Gatwick

Pat and Chris are going to fly from a London airport to Tenerife.
They must fly back from Tenerife to the same airport they left from.

All flights take 4 hours.

Pat and Chris want to arrive in Tenerife before 2 pm.
They want their flight back from Tenerife to leave after 2 pm.

(a) Which flights should they choose?

(2)

Write your answer in the box below.

Pat is going to rent a villa in Tenerife.
It costs 960 euros to rent the villa.

Pat is going to pay for the villa by bank transfer.
The bank charges £25 for the transfer.

Pat uses £1 = 1.17 euros.

Pat tells Chris it is going to cost less than £850 to pay for the villa and the transfer.

(b) Is Pat correct?
Show why you think this. (4)

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

10. Emma runs a network marketing agency.

Emma sells hair products directly to customers.
She also has agents who sell hair products.

Emma gets a percentage of the sales value as commission every time she sells to a customer or an agent.

Her friend Claire wants to buy £135 of hair products.

Emma has two options.
Option 1: Sell the hair products to Claire as a customer and get 24% commission.
Option 2: Recruit Claire as an agent and get £25 plus 8% commission.

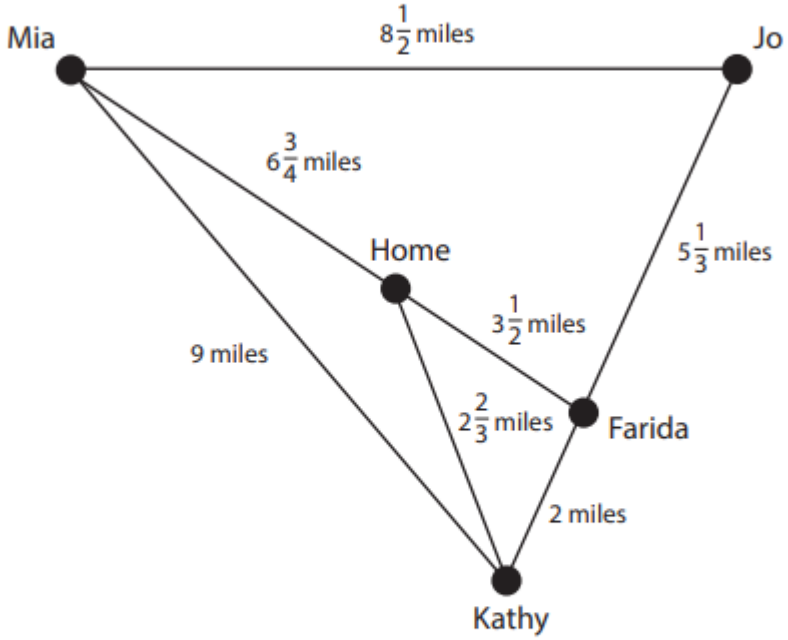
Emma thinks she will make more money on this sale if she chooses option 2

(a) Is Emma correct?
Show why you think this. (3)

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

Emma has to deliver hair products to 4 of her agents.
She needs to start and finish at her home.

Emma uses this diagram to help her find a route.



(b) Find a route for Emma.
How far does she travel?
Evaluate your route. (3)

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

11. Tim wants to cook some lamb.

He has these instructions to cook the lamb.

> Cook at 180°C for 25 mins per pound in weight plus 20 mins

The lamb weighs 3.5 kg.
1 kg = 2.2 pounds

(a) How long will it take to cook the lamb?

(3)

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

Notes