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.

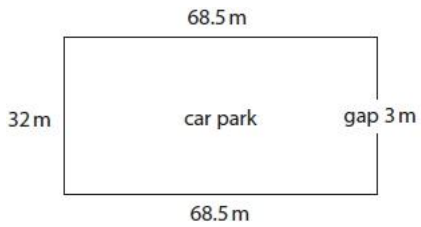


Diagram **not** accurately drawn

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 space below to show clearly how you get your answer.

Write your check in the space 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)

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

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

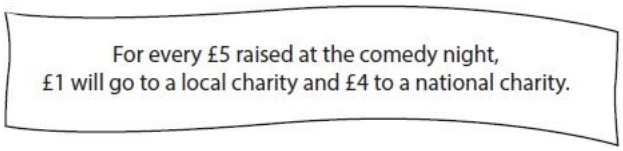
Don thinks he can expect to make at least £140

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

(4)

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

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 space 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 space 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)

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

6) 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.

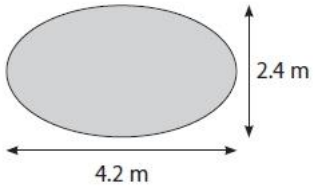
Each roll has 25 m of ribbon.

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

(3)

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

7) 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)

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

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 space below to show clearly how you get your answer.

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 space below to show clearly how you get your answer.

8) 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 space 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 space below to show clearly how you get your answer.

9) 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?

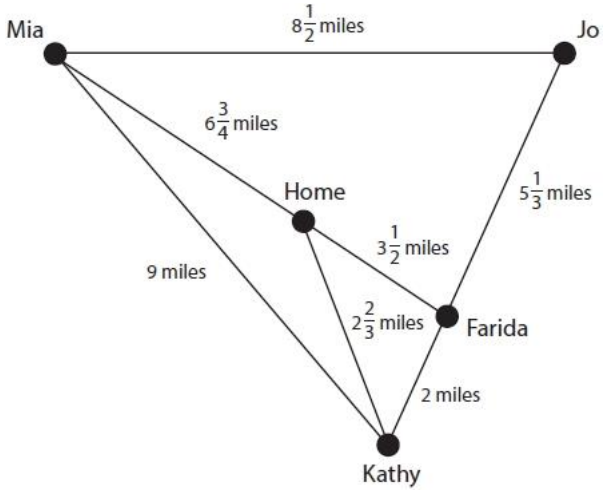
Show why you think this.

(3)

Use the space 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)

10)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

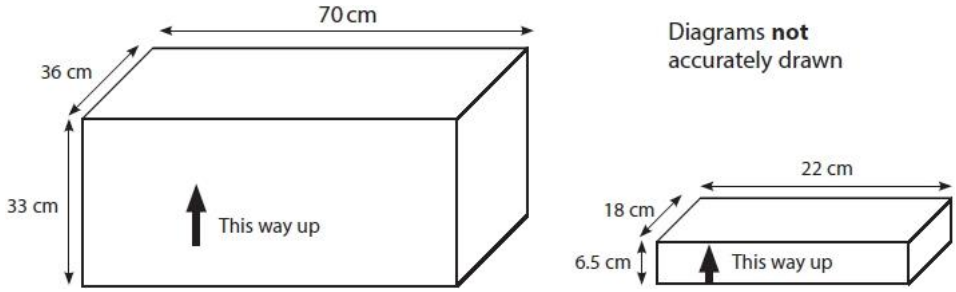
(a) How long will it take to cook the lamb?

(3)

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

Tim puts each meal into a box.
Each box is in the shape of a cuboid 22 cm by 18 cm by 6.5 cm.

The boxes will then be stacked into crates.
A crate is in the shape of a cuboid 70 cm by 36 cm by 33 cm.



Each box must be placed in the crate so that the arrow on the side of the box points upwards.

Tim can stack the boxes on top of each other.
He thinks he can place a maximum of 24 boxes into one crate.

(b) Is Tim correct?

Show why you think this.

(3)

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