



## FA Problem Solving Questions - Set 1c

1c. Mr Harris takes his family to the cinema.

TICKET PRICES	
Adult	£7.50
Child	£4.50
Family (2 adults and 2 children) £22	

He buys tickets for his family.

He pays the least possible amount of money.

(a) If there are 5 children and the total cost is £75, how many adults went on the trip?

(3)

If one of the adults is unable to go, how much cheaper is the trip?

(2)

2c. Sumitra can record up to 40 hours of television programmes on her TV recorder.

There are three programmes Sumitra wants to record.

2 episodes of a Game show

50 minutes each episode

Film

2 hours 15 minutes

3 episodes of a Reality show

1 hour 35 minutes each episode

What percentage of the available space will this use?

You must show all your working.

3c. Barry buys 60 books for £3 each.

He sells  $\frac{1}{3}$  of the books for £3.50 each.

He sells  $\frac{2}{5}$  of the books for £3 each.

What price does he sell the rest of the books for if he makes a profit of £6.

- 4c. Mr Williams is organising a school trip.  
Going on the school trip there will be

134 students from Year 8,  
some students from Year 9  
and 30 adults.

Mr Williams has hired 5 coaches so that everyone on the trip has a seat.

All the coaches that Mr Williams can hire seat 47 people.

What is the maximum number of Year 9 students that Mr Williams can take on the trip?  
You must show all your working.

**(3 marks)**

- 5c. Janice asks 100 students if they like biology or chemistry or physics best.

20 students like Physics best  
 $\frac{3}{5}$  of the students are girls  
The same number of boys and girls like Chemistry best.  
20 out of the 42 students who like biology best are boys.

What percentage of those who like Physics best are girls?

**(4 marks)**

- 6c. Mrs Miller is planning a party for some children.  
She will give each child a party bag to take home.  
She will put a hat and a toy in each party bag.

Party bags are sold in packs of 6  
Hats are sold in packs of 8  
Toys are sold in packs of 20

Mrs Miller buys the smallest possible number of packs of hats, toys and bags.

Mrs Miller finds she has no spare party bags at the end.  
How many children were invited to the party?

**(4 marks)**

- 7c. Last year Kerry's take home pay was £15 000  
She spent some of her take home pay on rent.

She used the rest of her take home pay for living expenses, clothes and entertainment in the ratio 7 : 4 : 3

If she spent £2100 on entertainment, then what percentage of her take home pay did Kerry pay on rent last year?

(4 marks)

- 8c. Jerry goes into a shop.

Prices	
Magazine	£2.40
Newspaper	90p
Bottle of water	£1.10

He buys some magazines and one newspaper.  
He also buys 4 bottles of water.

Jerry pays with a £20 note and receives 30p change.

Work out how many magazines he buys.

(4 marks)

- 9c. Mr Shah is working out the cost of the electricity he used in April.

Electricity Meter Readings	
1 April	79721
30 April	80305

Mr Shah has to pay

18.7p for each of the first 90 units used in April  
**and** a different amount for each of all the other units used in April.

If the total cost of the electricity he used in April is £50.49 then what was the cost of each of the other units?

(4 marks)

- 10c. Mrs Long has to buy 300 chocolate biscuits.  
She finds chocolate biscuits at 3 different shops.

Shop A	Shop B	Shop C
9 biscuits in a pack	18 biscuits in a pack	27 biscuits in a pack
£1.80 per pack	£2.50 per pack	£2.60 per pack
Buy one pack and get one extra pack free	Buy two packs and get one extra pack free	

In which shop are the biscuits cheaper?  
You must show your working.

(4 marks)