FA Problem Solving Questions – Set 1a

1a. 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 2 adults and 3 children.
He pays the least possible amount of money.

(a) What is the total cost of the tickets?

(3)

Mr Harris pays with two £20 notes.

(b) How much change should he get?

(2)

2a. Sumitra can record up to 40 hours of television programmes on her TV recorder.
She has already recorded 35 hours of programmes on the recorder.
She wants to keep all these recordings.

There are three more programmes Sumitra wants to record.

Game show		50 minutes
Film	2 hours	40 minutes
Reality show	1 hour	35 minutes

Can Sumitra record all three programmes on her TV recorder?
You must show all your working.

(4 marks)

3a. Barry buys 20 books for £2 each.

He sells $\frac{1}{2}$ of the books for £3.50 each.

He sells $\frac{1}{4}$ of the books for £3 each.

He sells the rest of the books for £2 each.

Work out Barry's total profit.

(4 marks)

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

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

Mr Williams must hire enough coaches so that everyone on the trip has a seat.

All the coaches that Mr Williams can hire seat 54 people.

What is the smallest number of coaches that Mr Williams has to hire?
You must show all your working.

(3 marks)

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

   38 of the students are girls.
   21 of these girls like biology best.
   18 boys like physics best.
   7 out of the 23 students who like chemistry best are girls.

Work out the number of students who like biology best.

(4 marks)

6a. Mrs Miller is planning a party for 70 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 15
   Hats are sold in packs of 8
   Toys are sold in packs of 10

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

Mrs Miller can fill more party bags than she needs.
How many more?

(4 marks)

7a. Last year Kerry's take home pay was £15 000
She spent 40% 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 3 : 1 : 2

How much did Kerry spend on entertainment last year?

(4 marks)

8a. Jerry goes into a shop.

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          Prices

Magazine         £2.40
Newspaper          90p
Bottle of water  £1.10
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Jerry has £10

He buys one magazine and one newspaper.
He also buys as many bottles of water as possible.

(i)   Work out how many bottles of water he buys.

Jerry pays with a £10 note.

(ii) Work out how much change he should get.

(4 marks)

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

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    Electricity Meter Readings

      1 April   79721
     30 April   80305
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Mr Shah has to pay

       21.3p for each of the first 70 units used in April
and   10.2p for each of all the other units used in April.

Work out the total cost of the electricity he used in April.

(4 marks)

10a. Mrs Long has to buy 270 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)

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