FA Problem Solving Questions – Set 5b

41b. Dan can put up 30 tiles in one hour.
He always works at the same speed.

He tiles a wall that needs 200 tiles.

He starts work at 7.25 a.m.

He has a 20 minute break in the morning and 45 minutes for lunch.

Work out the time that Dan should finish tiling the wall

(4 marks)

42b. Simon spent $\frac{2}{5}$ of his wages on rent.

He spent 23% of his wages on food.

He spent 0.18 of his wages on clothes

Work out the fraction of his wages that he had left.

(3 marks)

43b. Jessica's annual income is £12 000
She pays 15% of the £12 000 in rent.
She spends $\frac{2}{5}$ of the £12 000 on clothes.
Work out how much of the £12 000 Jessica has left.

(3 marks)

44b. Viv is training to keep fit.

One part of Viv's training session is a
35 second run followed by a $1\frac{1}{2}$ minute walk.
She repeats this run and walk 6 times.

Before doing this, she does some warm-up exercises for 10 minutes.

Afterwards she does a 10 minute cooling down exercise.

Viv started this training session at 12 30

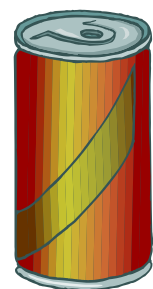 (a) At what time, to the nearest minute, did Viv finish her training session?

(4)

To help her training, Viv drinks 2 energy drinks.

She buys a pack of 12 energy drinks for £10.36

  (b) Work out the cost of the 2 energy drinks.

(3)

45b. A village fair has stalls to raise money for charity.

On one stall there is a game where you roll a 6-sided dice and spin a 4-sided spinner.
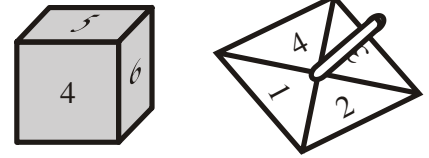
The dice is labelled 1, 2, 3, 4, 5, 6
The spinner is labelled 1, 2, 3, 4

People pay 50p to play the game.

The prizes are:

£1 if you get the same number on both the dice and spinner

£1.50 if the score on the spinner is greater than the one on the dice

During one day of the fair, exactly 360 people played the game.

Did the stall make a profit or a loss on this day?
You must fully explain your answer.

(7)

46b. The length of a flight from Moscow to London is 3 hours 45 minutes.

The 14 25 (Moscow time) flight from Moscow to London is delayed by 80 minutes.
The time in Moscow is two hours ahead of the time in London.

Work out the time (London time), that the flight is due to arrive in London.

(3)

There are 220 passengers on the flight.
20% of the passengers did not have a meal during the flight.

How many passengers had a meal during the flight?

(3)

47b. There are a total of 96 children in Years 4, 5 and 6

37 of these children cannot swim.
11 children in Year 4 cannot swim
21 children in Year 5 can swim.
There are 30 children in Year 6
18 of these 30 children can swim.

(i) Work out the number of children in Year 4 who can swim.
(ii) Work out the total number of children in Year 5

(4 marks)

48b. Harry has a bowl of flakes for breakfast each morning.
In each bowl he has on average 35 g of flakes.

A box contains 750 g of flakes.

(a) How long will the box last for?　　　You must show all of your working.

(3)

Harry is on a diet.
He is allowed to eat food containing no more than 1800 calories per day.

In one bowl of flakes, there are 130 calories.
(b) What percentage is one bowl of flakes of his daily allowance?

(2)

Each box of flakes is in the shape of a cuboid.
The dimensions of a box are 21 cm by 7 cm by 32 cm.
(c) Work out the volume of each box.

(3)

49b. 70 students each chose a PE activity.
They chose one of swimming, athletics or tennis.

10 out of the 37 girls chose swimming.
17 boys chose athletics.
19 students chose swimming.
22 students chose tennis.

One student is selected at random.

Work out the probability that this student is a boy who chose tennis.　　　(4 marks)

50b. Colin, Dave and Emma share some money.
Colin gets $\frac{3}{10}$ of the money.
Emma and Dave share the rest of the money in the ratio 3 : 2.

(a) What is Dave's share of the money?

(1 mark)

(b) What percentage of the money is left for Dave and Emma to share?

(1 mark)

(c) Divide the percentage for Dave and Emma in the ratio of 3:2

(2 marks)

(d) What is Dave's share as a fraction in its lowest terms

(1 mark)