



FA Problem Solving Questions - Set 5a

41a. Dan can put up 40 tiles in one hour.
He always works at the same speed.

He tiles a wall that needs 230 tiles.

He starts work at 7.30 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)

42a. Simon spent $\frac{1}{4}$ of his wages on rent.

He spent 20% of his wages on food.

He spent 0.15 of his wages on clothes

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

(3 marks)

43a. Jessica's annual income is £12 000

She pays 10% of the £12 000 in rent.

She spends $\frac{1}{4}$ of the £12 000 on clothes.

Work out how much of the £12 000 Jessica has left.

(3 marks)

44a. Viv is training to keep fit.

One part of Viv's training session is a
40 second run followed by a 2 minute walk.

She repeats this run and walk 5 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?

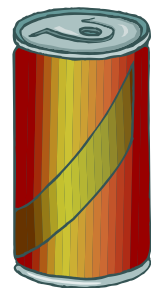
(4)

To help her training, Viv has energy drinks.

She buys a pack of 12 energy drinks for £9.18

(b) Work out the cost of one energy drink.

(3)



45a. 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

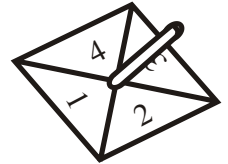
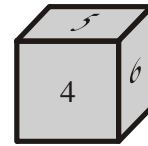
The score on the dice and the score on the spinner are added to get the total score.

People pay 50p to play the game.

The prizes are:

£1 for a total score of 7 or 8

£2 for a total score of 9 or 10



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)

46a. The length of a flight from Krakow to Liverpool is 2 hours 50 minutes.

The 17 15 (Krakow time) flight from Krakow to Liverpool is delayed by 75 minutes.

The time in Krakow is one hour ahead of the time in Liverpool.

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

(3)

There are 228 passengers on the flight.

Two thirds of the passengers did not have a meal during the flight.

How many passengers had a meal during the flight?

(3)

- 47a.** Harry has a bowl of flakes for breakfast each morning.
In each bowl he has on average 35 g of flakes.

A box contains 500 g of flakes.

- (a) Will one box last more than two weeks?
You must show all of your working.

(3)

Harry is on a diet.

He is allowed to eat food containing no more than 2000 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 23 cm by 7 cm by 30 cm.

- (c) Work out the volume of each box.

(3)

- 48a.** On an activity day students play one sport.
They play football or hockey or tennis.

120 students are on the activity day.

30 of the students are boys.

12 of the boys and 26 of the girls play hockey.

45 of the students play football.

35 of the 45 students who play football are girls.

Work out the number of girls who play tennis.

(4 marks)

- 49a.** 23 people work in a small factory.
12 are female,
10 wear glasses,
3 are female and wear glasses.

How many men wear glasses?

(3 marks)

<https://www.youtube.com/playlist?list=PLQVABzoMIH69K9AAI2cHIzyRvchReWeLy>

50a. In the UK, petrol costs £1.24 per litre.

In the USA, petrol costs 3.15 dollars per US gallon.

1 US gallon = 3.79 litres

£1 = 1.47 dollars

Is petrol cheaper in the UK or in the USA?

(4 marks)