



## FA Problem Solving Questions – Set 2b

11b. Noah has some marbles.

He gives Keira 20% of his marbles.

He gives Ali 50% of his marbles.

Noah has 18 marbles left.

How many marbles did he have to start with?

(4 marks)

12b. Tim is travelling home from holiday by plane.

He buys some food and drink on the plane.

Tim buys two cheese rolls, some crisps and an orange juice.

He pays £4.60 and then pays the rest of the cost with a 10 euro note.

How much change does he get in euros?

### Price List

Cheese Roll            £3.50

Crisps                    £1.20

Chocolate bar        £1.30

Coffee                    £2.50

Tea                        £2.00

Orange Juice         £2.20

Exchange rate £1 = 1.25 euros

(4 marks)

13b. Jenny fills some empty flowerpots completely with compost.

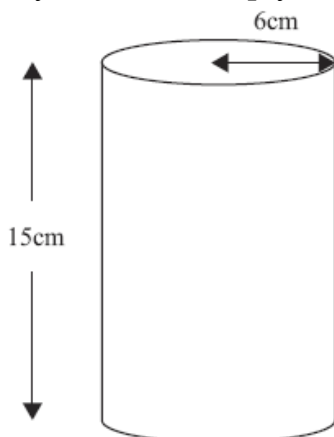


Diagram NOT accurately drawn

Each flowerpot is in the shape of a cylinder of height 15 cm and radius 6 cm. She has a 25 litre bag of compost.

She fills up each flowerpot completely.

How many flowerpots can she fill?

You must show your working.

(4 marks)

**14b.** A ladder is placed on horizontal ground, resting against a vertical wall.

The instructions for using the ladder say that the bottom of the ladder must **not** be closer than 1.5 m from the bottom of the wall.

If you need the ladder to reach up to a height of 7.3m then what is the smallest ladder you can use?

Give your answer correct to 1 decimal place.

**(3 marks)**

**15b.** 6 kg of apples cost £8.40

5 kg of apples and 4 kg of bananas cost £11.80

Work out the cost of 1 kg of bananas.

**(3 marks)**

**16b.** Here are some fractions.

$$\frac{4}{10}, \frac{3}{9}, \frac{8}{24}, \frac{6}{15}, \frac{12}{36}$$

(a) Which two of the fractions are not equivalent to  $\frac{1}{3}$ ?

You must show your working.

**(3)**

(b) Here are two fractions  $\frac{3}{5}$  and  $\frac{5}{8}$ .

Explain which is the larger fraction.

**(3)**

**17b.** 65 students were asked if they watched tennis yesterday.

29 of the students are girls.

14 boys did not watch tennis yesterday.

34 students watched tennis yesterday

One of the boys is to be chosen at random.

Write down the probability that the student chosen will have watched tennis yesterday.

Give your answer as a fraction in its simplest form.

**(4 marks)**

**18b.** Samantha wants to buy a new pair of trainers.

There are 3 shops that sell the trainers she wants.

|                       |
|-----------------------|
| <b>Sports '4' All</b> |
| <b>Trainers</b>       |
| <b>£7.30</b>          |
| plus                  |
| 12 payments of £3.80  |

|                       |
|-----------------------|
| <b>Edexcel Sports</b> |
| <b>Trainers</b>       |
| 25% off               |
| usual price of        |
| <b>£70</b>            |

|                      |
|----------------------|
| <b>Keef's Sports</b> |
| <b>Trainers</b>      |
| <b>£43</b>           |
| plus                 |
| VAT at 20%           |

From which shop should Samantha buy her trainers to get the best deal?

You must show all of your working.

(5 marks)

**19b.** The table gives information about an estate agent's charges for selling a house.

| <b>Value of the house</b> | <b>Estate agent's charges</b>   |
|---------------------------|---|
| Up to £145 000            | 2.5% of the value of the house  |
| Over £145 000             | 2.5% of the first £145 000<br>plus<br>1.5% of the remaining value<br>of the house |

Ken uses this estate agent to sell his house.

The estate agent sold Ken's house for £180 000.

Work out the total charge that Ken will have to pay.

(4 marks)

**20b.** Robert is in hospital.

He takes a pill every 6 hours.

He has some medicine every 9 hours.

He has an injection every 8 hours.

Robert took a pill, had some medicine and an injection.

How long before Robert has all three together again?

You must show your working.

(3 marks)