

1. Jenna is going on holiday to North America. She checks the exchange rate and sees that one dollar (\$) is worth £0.73 (or 73 pence). She wants to take \$225 with her. How much will this cost in pounds and pence?

It will cost her £_____ to buy \$225 (1 mark)

2. Sumaiya and Georgina live 20 kilometres apart on a straight road. One day they decide to meet somewhere along this road. Sumaiya cycles at 24 kilometres per hour and Georgina walks at 6 kilometres per hour. They both leave their houses at a quarter past eight in the morning. At what time do they meet?

The time Sumaiya and Georgina will meet is _____ a.m. (1 mark)

3. Consecutive numbers are numbers which follow each other in order, without gaps, from smallest to largest.

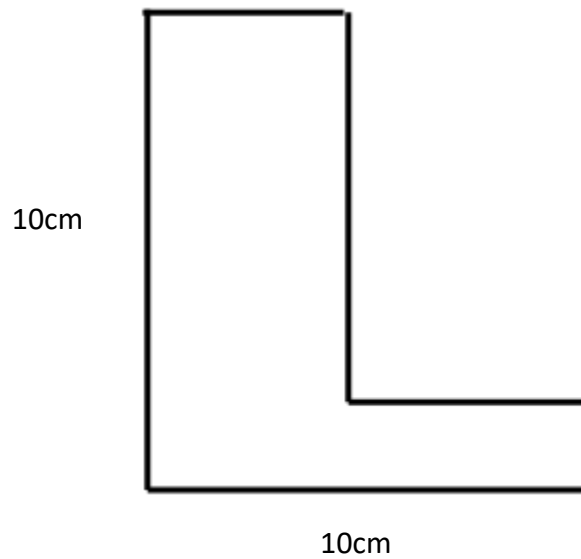
a) Find three consecutive whole numbers which, when added together, make 3126.

_____ and _____ and _____ (1 mark)

b) Five consecutive odd numbers, when added together, make 3225. Which of these five numbers is the largest?

_____ (1 mark)

4. Work out the perimeter of the following shape



_____ cm

(1 mark)

5. The mass of a crusty loaf is 740 grams. What is the total mass in kg of 24 crusty loaves?

_____ kg

(1 mark)

6. Which of these fractions is not equivalent to the others?

$$\frac{9}{24}$$

$$\frac{27}{72}$$

$$\frac{1.5}{4}$$

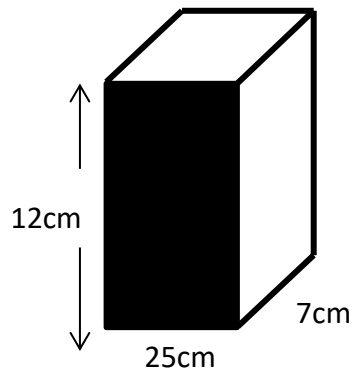
$$\frac{18}{56}$$

$$\frac{3}{8}$$

The fraction which is not equivalent to the others is _____

(1 mark)

7. A cuboid has the following measurements:



Please note, the diagram is not drawn to size

What is the ratio of the area of the shaded face of the cuboid to the volume of the cuboid?

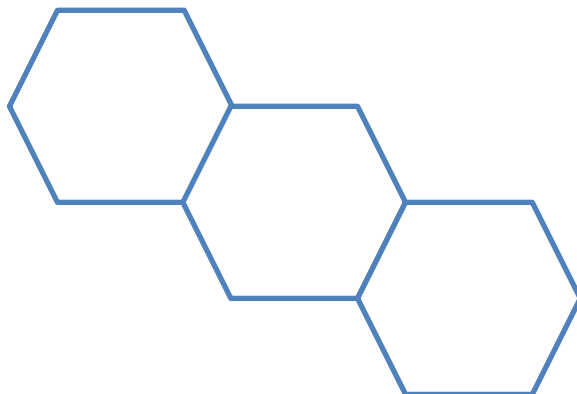
Give your answer in its simplest form.

The ratio of the area of the shaded face to the volume of the cuboid is

_____ to _____

(1 mark)

8. Three regular hexagons of side 1cm are placed together as shown below. The perimeter of the shape is 14cm. What is the perimeter of the shape, if six regular hexagons are placed the same way?



Please note, the diagram is not drawn to size

The perimeter of the shape is _____ cm

(1 mark)

Maths Sample Questions - Answer Sheet

Introduction

The questions used here are questions from past second stage entrance examinations. The questions on the paper do not become increasingly difficult; rather the levels of difficulty are spread throughout the paper. Below you will find the answer to each question and the way that the answer was worked out.

1. This question is a simple multiplication of 225×0.73 . If you work it out using 73, don't forget to put the decimal point in the right place. The answer is £164.25.
2. The best way to work this one out is to calculate how long it takes each girl to travel one kilometre. In the case of Sumaiya, it is 2 and a half minutes (60 divided by 24); Georgina walks one kilometre in 10 minutes. You can then calculate that after 40 minutes, Sumaiya will have cycled 16 kilometres and Georgina will have walked four kilometres, meaning that they meet at that point. **The answer therefore is 8.55 a.m. (forty minutes after they left).**
3. The best way to work this out is to divide the total number by three first of all. That gives you 1042. **So the three consecutive numbers are 1041, 1042 and 1043.**
The second question concerns odd numbers. Again, divide the total (this time by five because there are five consecutive odd numbers) which gives 645.
This means that $641 + 643 + 645 + 647 + 649 = 3225$ and the largest of these is 649
4. Although the shape is not a regular square, the sum of the perimeter is still $4 \times 10\text{cm}$ **so the answer is 40cm.**
5. Again, a straight forward multiplication, although this time you need to remember to express the answer in kilograms rather than grams. So 24×740 gives you 17760, but you need to divide by 1000 **giving the answer as 17.76 kg.**
6. **The answer is 18/56;** for 18 to have been correct, it would have had to have been over 48.
7. Firstly you need to work out the area of the shaded part of the cuboid, which is $12 \times 25 = 300 \text{ cm}^2$. The cuboid's volume is $12 \times 25 \times 7$ (which equals 2100 cm^3). You then need to simplify the ratio 300 to 2100 to its simplest form to get the **answer which is 1 to 7.**
8. We know that each face of the hexagon has a length of 1cm, making a total perimeter of 14 cm. By adding on three more hexagons, you have a further 12 cm perimeter (remember that one side joins onto the existing shape). **So the total perimeter is 26 cm.**