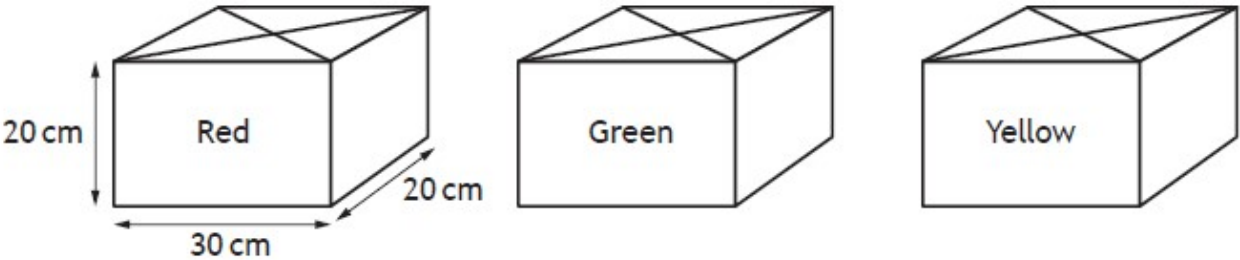# N5 Applications of Mathematics   Ratio & Proportion

Kieran and Gemma have each set themselves a monthly electricity allowance.

Kieran has set himself an allowance of £42.

Gemma has set herself an allowance of £49.

At the end of July, their smart meters recorded that

- Kieran had used £15 of his allowance
- Gemma had used £21 of her allowance.

Determine who had used a greater proportion of their allowance.

Use your working to justify your answer.

3

Ans

Gemma (since $\dfrac{6}{14} > \dfrac{5}{14}$)

Mary gave some money to four of her nieces.

It was shared **in proportion to** their ages.

Name	Age
Jane	4
Heather	11
Laura	9
Kate	6

Kate's share is £1950.

Calculate the total amount Mary gifted her nieces.

3

Ans

Jane £1300, Heather £3575, Laura £2925
Total: 1300 + 3575 + 2925 + 1950 = £9750

2018 P2 Q6	Ali, Kate and Jim are paid to deliver leaflets advertising a new restaurant. They shared the money they were paid in a ratio of 3 : 5 : 7. Jim received £154. Calculate how much the restaurant paid, in total, to deliver the leaflets.	2
Ans	330	
2018 P2 Q5(a)	Three tonnes of sheep food will feed 350 sheep for 18 days. The number of sheep **increases** by 100. (a) How long will the same weight of food now last?	3
Ans	14 days	
2017 P1 Q6	The mathematics teachers in a school win a lottery. They decide to share their winnings in **proportion** to the amount they each pay per week. They each pay the following amounts per week: Mr Jones £0·50 Miss Smith £2·00 Mr Ross £2·50 Mr Young £4·00 Mr Young's share is £2 794 000. Calculate how much the teachers win in total.	3
Ans	(£)6 286 500	

Lanark Grammar School

Brendan makes candles from blocks of wax.

Each block of wax is a cuboid measuring 30 cm by 20 cm by 20 cm as shown.

Each candle contains the colours red, green and yellow in the ratio 3 : 1 : 2 respectively.

Each candle is a cube with volume 729 cm³.

(a) Brendan only has 1 block of each colour.
What is the maximum number of candles that he can make?

3

Ans	32 candles

A restaurant can buy long grain rice in two sizes of bags.

• A 9 kg bag costs £25·65
• A 20 kg bag costs £57·20

Which size of bag is better value for the restaurant?

Use your working to justify your answer.

3

Ans	9 kg bag supported by working

Lanark Grammar School

Publicity material is to be designed for a theatre show that is being sponsored by a local company.

All the publicity material must feature the company logo.

The company logo is in the shape of a triangle.

The designer is to produce a small "flyer" and a large poster.

The designer produces a sketch for the flyer as shown.

Central Theatre Summer Show

22 cm

8 cm

7 cm

16 cm

(a) The ratio of the dimensions in the poster to those in the flyer is 7:2.

Calculate the dimensions of the logo as it will appear on the poster.

2

Ans | Logo is 24·5/28(cm) base/ height

A shop sells Ice Cola in 330 millilitre cans.

An individual can costs 66 pence.

Complete the shelf label for Ice Cola below to show the price per litre.

2

| 330 ml | | 1 litre |
| 66p | equivalent to | _____ |

Ans | £2(·00)/200p per litre

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