SIMPLE RATIO AND RECIPES — TRANSCRIPT

Example 1 - Simple Ratio

Jack and Kevin share 28 sweets in the ratio 4:3 respectively. How many sweets does each boy receive?

Total sweets = 28 Total shares 4 + 3 = 7 shares

So 7 shares = 28 sweets

1 share = $\frac{28}{7}$ = 4 sweets

Jack receives 4 × 4 = 16 sweets

Kevin receives 3 × 4 = 12 sweets

Example 2 - Simple Ratio

Alan, Bill and Colin share £20 in the ratio 5:3:2 respectively. How much does each boy receive?

£20 represents 5 + 3 + 2 = 10 shares

1 share = $\frac{£20}{10}$ = £2

Alan receives 5 × £2 = £10

Bill receives 3 × £2 = £6

Colin receives 2 × £2 = £4

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Example 3 - Simple Ratio

Brass is made from Copper and Zinc in the ratio 5:3. How much Brass could be made using 40g of Copper, and how much Zinc would be needed?

Copper 40g represents 5 parts

$$\text{so } 1 \text{ part} = \frac{40g}{5} = 8g$$

Brass = 5 + 3 = 8 parts

8 parts = 8 × 8g = 64g

So 64g of Brass

Zinc = 3 parts

3 parts = 3 × 8g = 24g

So 24g of Zinc required

Example 4 - Simple Ratio

The ratio of males to females in a gym membership is 7:4. If there are 32 female members, how many male members are there?

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32 females represents 4 parts

1 part $= \frac{32}{4} = 8$ people

Males are 7 parts $= 7 \times 8 = 56$ people

So 56 male members

Example 5 - Recipes

Fruit pie ingredients for 4 people are as follows:

80 g plain flour

60 g ground almonds

90 g soft brown sugar

60 g butter

4 ripe pears

What ingredients are required for 6 people?

For 1 person need to $\div 4$

Then for 6 people need to $\times 6$

so $\times \frac{6}{4}$ which cancels to $\times \frac{3}{2}$

$80 \div 2 = 40$ $\quad 40 \times 3 = 120$g of plain flour

$60 \div 2 = 30$ $\quad 30 \times 3 = 90$g of ground almonds

$90 \div 2 = 45$ $\quad 45 \times 3 = 135$g of soft brown sugar

$60 \div 2 = 30$ $\quad 30 \times 3 = 90$g of butter

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$4 \div 2 = 2 \quad 2 \times 3 = 6$ ripe pears

Alternatively, we could take the view that 6 people is one and a half lots of 4 people and just add half of each quantity to the original amount of that quantity to find the required ingredients.

So

80g	flour	80 + 40	=	120g flour
60g	ground almonds	60 + 30	=	90g almonds
90g	soft brown sugar	90 + 45	=	135g sugar
60g	butter	60 + 30	=	90g butter
4	ripe pears	4 + 2	=	6 ripe pears

Example 6 – Recipes

Chocolate Chip Cookies - Ingredients for 10 cookies:

100g of flour
60g of sugar
50g of margarine
40g of chocolate chips
2 eggs

What ingredients are required for 25 cookies?

for 1 cookie we need to $\div 10$

then for 25 cookies we need to $\times 25$

so $\times \frac{25}{10}$ which cancels to $\times \frac{5}{2}$

$100 \div 2 = 50$ $50 \times 5 = 250$g of flour

$60 \div 2 = 30$ $30 \times 5 = 150$g of sugar

$50 \div 2 = 25$ $25 \times 5 = 125$g of margarine

$40 \div 2 = 20$ $20 \times 5 = 100$g of chocolate chips

$2 \div 2 = 1$ $1 \times 5 = 5$ eggs

Alternatively, we could consider that 25 is two and a half lots of 10.

We could then find the ingredients by doubling each quantity and adding half the original amount to it.

100g flour → 200 + 50 = 250g flour

60g sugar → 120 + 30 = 150g sugar

50g margarine → 100 + 25 = 125g margarine

40g choc chips → 80 + 20 = 100g choc chips

2 eggs → 4 + 1 = 5 eggs

Both methods should give the same answers
