Topic Check In - 5.01 Calculations with ratio

1. Write the ratio 6 : 8 in its simplest form.

2. Write 0.25 m to 1.5 m in its simplest form.

3. Write 3 : 7.5 in the ratio 1 : *n*.

4. Share £360 in the ratio 4 : 5.

5. Luke and Fahad share marbles in the ratio 2 : 3. If Luke gets 32 marbles, how many marbles does Fahad receive?

6. Explain why the ratio 1 hour to 30 minutes in the form 1 : *n* is not 1 : 0.30.

7. The ratio of girls to boys in Mrs Brown's class is 3 : 5. The ratio of girls to boys in Mr Green's class is 3 : 4. Explain why there could be the same number of boys in both classes.

8. John and Paula share a bag of sweets. John gets 3 times as many sweets as Paula. Explain why Paula has $\frac{1}{4}$ of the total number of sweets.

9. Farmer Fred harvests his apple trees. He splits his crop into Premium, Budget and Rotten in the ratio 3 : 7 : 2. Calculate the total number of apples picked if he had 18 rotten apples.

10. Zahira is making a fruit drink using orange juice, mango juice and apple juice in the ratio 5 : 2 : 3. She has plenty of orange juice and apple juice, but only 70 ml of mango juice. How much fruit drink can she make?

Extension

A supermarket sells packets of washing powder in 3 sizes.

Size	Price	Number of washes
Large	£11.00	45
Medium	£5.59	23
Small	£3.50	10

Which is the best value for money?

Use the internet to investigate the prices and suggested number of washes for different sized packets of washing powder.

Answers

1. 3 : 4

2. 1 : 6

3. 1 : 2.5

4. £160 and £200

5. 48

6. 0.5 is half an hour not 0.3

7. No information has been given about the total numbers in each class e.g. if there were 20 boys in both classes then Mrs Brown's class has 12 girls and Mr Green's class has 15 girls.

8. The sweets are shared in a ratio of 3 : 1 which means there are 4 parts in total and Paula gets one part, or $\frac{1}{4}$ of the total.

9. 108

10. 350 ml

Extension

Medium size is the best value because:

1100 ÷ 45 = 24.44p per wash for large size
559 ÷ 23 = 24.3p per wash for medium size
350 ÷ 10 = 35p per wash for small size   oe calculations

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Assessment Objective	Qu.	Topic	R	A	G
AO1	1	Write an integer ratio in its simplest form.			
AO1	2	Write a decimal ratio in its simplest form.			
AO1	3	Write ratio in the form 1 : n.			
AO1	4	Share an amount in a given ratio.			
AO1	5	Use ratios to find unknown quantities.			
AO2	6	Write quantities in different units as a ratio.			
AO2	7	Recognise that a ratio represents proportion and not a total.			
AO2	8	Understand the link between a ratio and fractions.			
AO3	9	Work out missing ratio quantities in order to calculate the total.			
AO3	10	Solve a problem when one part of the ratio is in a limited quantity.			

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