3.4 Ratio Problems with Totals and Differences: 30-minute Pack

Calculators not allowed · about 30 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 The ratio of red to blue counters in a bag is 7 : 6. There are 2 more red than blue. How many red and blue are there altogether?

(4)

2 Red and blue paint are mixed in the ratio 4 : 3. What fraction of the mixture is red?

(2)

3 Red and white are mixed in the ratio 2 : 3 to make paint. Work out how much red is in 25 litres of paint.

(3)

4 Red and white are mixed in the ratio 1 : 6 to make paint. Work out how much red is in 70 litres of paint.

(3)

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5 There are 24 pupils in a club. The ratio of boys to girls is 5 : 7. Work out the number of boys and the number of girls.

(a) How many boys are in the club? **(1)**

.....

(b) How many girls are in the club? **(1)**

.....

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6 Leo's fruit squash is made with juice and water in the ratio 3 : 4. Isla's squash is made with juice and water in the ratio 6 : 6. Whose squash is stronger (has the greater fraction of juice)? Show your working.

(3)

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7 3/7 of the sweets in a jar are red and the rest are green. Write the ratio of red sweets to green sweets in its simplest form.

(2)

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8 The angles in a quadrilateral are in the ratio 2 : 3 : 4 : 5. Find the size of the largest angle.

Work out the largest angle in degrees. **(2)**

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9 Simplify the ratio 15 : 25.

(1)

10 Share £90 in the ratio 2 : 7. Find each share.

(2)

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Mark scheme · 3.4 Ratio Problems with Totals and Differences: 30-minute Pack

Question 1

difference in parts 1	M1
2 ÷ 1 = 2	M1
13 x 2	M1
26 cao	A1

Answer: **26**

Question 2

4 + 3 = 7 parts	M1
4/7 cao	A1

Answer: **4/7**

Question 3

2 + 3 = 5 parts	M1
25 ÷ 5 x 2	M1
10 litres cao	A1

Answer: **10 litres**

Question 4

1 + 6 = 7 parts	M1
70 ÷ 7 x 1	M1
10 litres cao	A1

Answer: **10 litres**

Question 5

(a) 10 cao	B1

(a) Answer: **10**

(b) 14 cao	B1

(b) Answer: **14**

Question 6

3/7 or a decimal for one squash	M1
6/12 for the other, compared	M1
Isla's squash is stronger	A1

Answer: **Isla's squash is stronger**

Question 7

green = 1 - 3/7 = 4/7	M1
3 : 4 cao	A1

Answer: **3 : 4**

Question 8

method: total of angles 360 and one part = 360 / (2+3+4+5) = 360/14	M1
900/7 degrees (accept 128 4/7, or 128.6 or better)	A1

Answer: **900/7**

Question 9

3 : 5 cao	B1

Answer: **3 : 5**

Question 10

one part = 90 / (2+7) = 10	M1
£20 and £70 cao	A1

Answer: **£20 and £70**

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