3.2 Writing and Simplifying Ratios: 30-minute Pack

Calculators not allowed · about 30 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 A cake costs £2.50 and a biscuit costs 75p. Write the ratio of the cost of the cake to the cost of the biscuit in its simplest form.

(2)

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2 Write each ratio in the form given.

(a) 4 : 10 in the form 1 : n **(1)**

(b) 15 : 6 in the form n : 1 **(1)**

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3 A judo club has 20 boys and 35 girls.

(a) Write the ratio of boys to girls in its simplest form. **(1)**

(b) Write the ratio of girls to boys in its simplest form. **(1)**

(c) Write the ratio of girls to all the members of the club in its simplest form. **(1)**

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4 Sam simplifies the ratio 12 : 18 and writes 4 : 6. Explain why Sam has not simplified the ratio fully, and write the ratio in its simplest form.

(2)

5 The ratio of the length of a model to the length of the real plane is 8 : 30. Write this ratio in the form 1 : n.

(2)

6 Write the ratio 33 : 66 : 11 in its simplest form.

(2)

7 Write the ratio 2 : 11 in the form 1 : n.

(2)

8 Write the ratio 35 : 40 : 20 in its simplest form.

(2)

9 Write the ratio 4 : 12 in the form 1 : n.

(2)

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10 Maya's fruit squash is made with juice and water in the ratio 1 : 7. Leo's squash is made with juice and water in the ratio 4 : 6. Whose squash is stronger (has the greater fraction of juice)? Show your working.

(3)

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11 A class has ratio of girls to boys 2:3. There are 20 pupils in the class. Work out the number of girls.

(2)

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Mark scheme · 3.2 Writing and Simplifying Ratios: 30-minute Pack

Question 1

changes to the same units, e.g. 250 : 75 (or 2.5 : 0.75)	**M1**
10:3 cao	**A1**

Answer: **10:3**

Question 2

(a) 1:2.5 cao (accept 1 : 5/2, 1 : 2 1/2)	**B1**

(a) Answer: **1:2.5**

(b) 2.5:1 cao (accept 5/2 : 1, 2 1/2 : 1)	**B1**

(b) Answer: **2.5:1**

Question 3

(a) 4:7 cao	**B1**

(a) Answer: **4:7**

(b) 7:4 cao	**B1**

(b) Answer: **7:4**

(c) 7:11 cao	**B1**

(c) Answer: **7:11**

Question 4

4 and 6 still have a common factor (2) / can both still be divided by 2, oe	**B1**
2:3 cao	**B1**

Answer: **4 and 6 can both still be divided by 2, so the simplest form is 2 : 3.**

Question 5

30 ÷ 8	**M1**
1 : 3.75 cao	**A1**

Answer: **1 : 3.75**

Question 6

divides by a common factor	**M1**
3 : 6 : 1 cao	**A1**

Answer: **3 : 6 : 1**

Question 7

divides both parts by 2	**M1**
1 : 5.5 cao	**A1**

Answer: **1 : 5.5**

Question 8

divides by a common factor	**M1**
7 : 8 : 4 cao	**A1**

Answer: **7 : 8 : 4**

Question 9

divides both parts by 4	**M1**
1 : 3 cao	**A1**

Answer: **1 : 3**

Question 10

1/8 or a decimal for one squash	**M1**
4/10 for the other, compared	**M1**
Leo's squash is stronger	**A1**

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

Question 11

method: 2 + 3 = 5 parts, 20/5 = 4 or equivalent	**M1**
8 girls cao	**A1**

Answer: **8 girls**

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