

GCSE Maths: Ratio in context: recipes, mixing, concentration and conversion (Higher): answers

GCSE Maths - Ratio and Proportion - Higher - Lesson 15.6

Answers. Final answers to the worksheet questions. Full step-by-step solutions for every question are free at websink.site/gcse/maths/ch15-ratio-proportion/higher/ratio-in-context-recipes-mixing-concentration-and-conversion/

Exercise 15F Ratio in context Calculator allowed

- 1** A recipe for 4 people uses 200 g of flour, 80 g of sugar, 120 g of butter and 2 eggs. Work out the amounts needed for each number of people.

(a) For 8 people

Answer: Flour 400 g; Sugar 160 g; Butter 240 g; Eggs 4

(b) For 12 people

Answer: Flour 600 g; Sugar 240 g; Butter 360 g; Eggs 6

(c) For 2 people

Answer: Flour 100 g; Sugar 40 g; Butter 60 g; Eggs 1

(d) For 6 people

Answer: Flour 300 g; Sugar 120 g; Butter 180 g; Eggs 3

- 2** Red and white paint are mixed in the ratio 2 : 5 to make 14 litres of pink paint. How many litres of each colour are used?

Answer: red 4 litres and white 10 litres

- 3** Squash is made from squash concentrate and water in the ratio 1 : 4. Jo uses 250 ml of concentrate. How much water does she use and how much squash does she make?

Answer: water 1000 ml and total 1250 ml

- 4** Concrete is made from cement, sand and gravel in the ratio 1 : 2 : 4. A builder makes 56 kg of concrete. How much of each material does he use?

Answer: cement 8 kg, sand 16 kg and gravel 32 kg

- 5** The exchange rate is £1 = €1.15. Convert each amount.

(a) £80 to euros

Answer: €92

(b) £250 to euros

Answer: €287.50

(c) €138 to pounds

Answer: £120

(d) €46 to pounds

Answer: £40

6 A map has a scale of 1 : 50 000.

(a) A road is 6 cm long on the map. How long is it in real life, in km?

Answer: 3 km

(b) A lake is 2.5 km long in real life. How long is it on the map, in cm?

Answer: 5 cm

7 A cleaning solution is made by mixing cleaner and water in the ratio 1 : 9. Work out how much cleaner is needed to make 500 ml of solution.

Answer: cleaner 50 ml and water 450 ml

8 Drink A is made by mixing squash and water in the ratio 1 : 4. Drink B is made by mixing squash and water in the ratio 1 : 5. Which drink is stronger? Show how you decide.

Answer: Drink A

9 A recipe for 12 cupcakes uses 150 g of butter. Mia has 450 g of butter and plenty of the other ingredients. How many cupcakes can she make?

Answer: 36

10 A gardener mixes plant food and water in the ratio 1 : 24. She uses 100 ml of plant food. How much water does she use, and how much mixture does she make?

Answer: water 2400 ml and total 2500 ml

11 A T-shirt costs \$30 in the USA and £22 in the UK. The exchange rate is £1 = \$1.25. In which country is the T-shirt cheaper, and by how much (in pounds)?

Answer: UK, by £2

12 Orange paint is made from red and yellow paint in the ratio 3 : 2. Ella has 600 ml of red paint and 500 ml of yellow paint. What is the largest amount of orange paint she can make?

Answer: 1000 ml

13 Mixture A has milk and water in the ratio 2 : 3. Mixture B has milk and water in the ratio 3 : 1. 20 litres of mixture A and 20 litres of mixture B are poured into a tank. Write the ratio milk : water in the tank in its simplest form.

Answer: 23 : 17

14 A school canteen makes 24 glasses of squash, each of 250 ml. The squash is made from concentrate and water in the ratio 1 : 4. How many litres of concentrate are needed?

Answer: 1.2 litres

15 A jug holds 1.2 litres of squash made with concentrate and water in the ratio 1 : 5. How much water must be added so that the ratio becomes 1 : 8?

Answer: 600 ml