

Ratio 3

1. In a class of first year pupils there are 15 boys and 10 girls. Express the ratio of boys to girls in the class in its simplest form.



2. A group of fourth year pupils sit a Standard Grade examination. 70 pupils pass the examination and 40 fail. Express the ratio of passes to fails in its simplest form.



3. A cat and dog home has 36 cats and 48 dogs in it. Express the ratio of cats to dogs in the home in its simplest form.

4. A small clerical company employs 15 female and 12 male workers. Express the ratio of female to male workers in its simplest form.

5. Jack and Jill are going to put money together to buy a new computer. Jack puts in £250 and Jill puts in £200. Express the ratio of the money Jack puts in compared to Jill in its simplest form.



6. Last November there were 18 days on which it rained. Express the ratio of wet to dry days last November in its simplest form.



7. Blue, yellow and red paint are mixed together in the ratio 3:2:4. 15 litres of blue paint is used. How much red paint is needed?



8. Fresh orange juice and lemonade are mixed together in the ratio 3:5. 100 ml of lemonade is used. How much fresh orange is used?

9. The ratio of male to female teachers in a secondary school is 4:9. There are 24 male teachers in the school. How many female teachers are there?

10. The ratio of people who could name the animal shown opposite to those who could not is 2:7. 28 people could not name the animal. How many people could name the animal?



11. The ratio of the number of people who recognised the film shown to those who did not was 2:5. 40 people recognised the film, how many did not?



12. Steel and carbon are mixed by weight in the ratio 3:13.
39 kilograms of steel is used, how much carbon is needed?

13. The ratio of the sale of DVD's to Blu-ray's in a shop one day is 5:3.
That day the shop sells 75 Blu-ray discs, how many DVD's does the shop sell?

14. In a beehive the ratio of female to male bees is 2500:17.
There are 85 male bees in the hive. How many female bees are there?



15. A box of chocolates contains two types of chocolate – soft-centre and toffees, in the ratio 7:3. There are 12 toffees in the box.

- (a) How many soft-centres are in the box?
(b) How many chocolates are in the box in total?



16. A quiz consists of two grades of question, medium or difficult, in the ratio 3:2. There are 22 difficult questions in the quiz.

- (a) How many medium questions are there?
(b) How many questions are there in total in the quiz?

17. The ratio of goals scored by Alchester Rovers football club in the first half of games compared to the second half is 2:5.
Alchester Rovers scored 24 goals in the first half of games.

- (a) How many goals did they score in the second half of games?
(b) How many goals did they score altogether?



18. A bag contains some red and some yellow counters, in the ratio 7:5.
There are 20 yellow counters in the bag.

- (a) How many red counters are in the bag?
(b) How many counters are in the bag in total?

19. A school theatre trip is made up of teachers and pupils in the ratio 2:15.
There are 6 teachers on the trip.

- (a) How many pupils are on the trip?
(b) How many people are on the trip altogether?

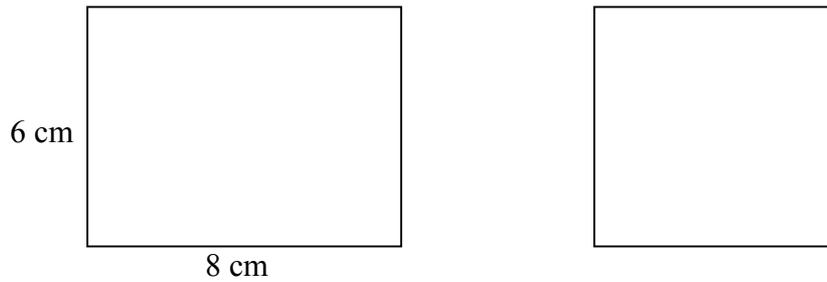


20. An orchard has a mixture of apple and pear trees in the ratio 9:2.
There are 108 apple trees in the orchard.

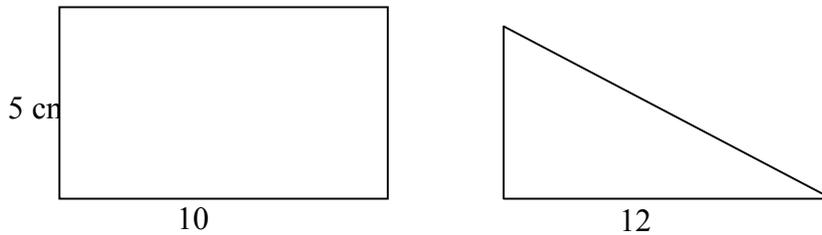
- (a) How many pear trees are in the orchard?
(b) How many trees are in the orchard in total?



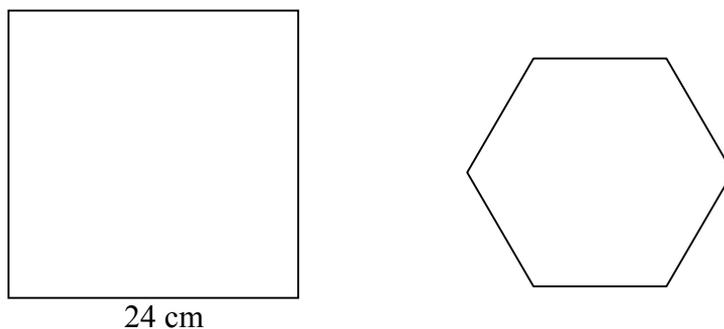
21. The diagram below shows a rectangle and a square. The ratio of the area of the rectangle to the area of the square is 4:3.



- (a) Calculate the area of the rectangle.
(b) Find the area of the square.
(c) Calculate the length of the side of the square.
22. The diagram below shows a rectangle and a right-angled triangle. The ratio of the area of the rectangle to the triangle is 5:3.



- (a) Calculate the area of the rectangle.
(b) Calculate the area of the triangle.
(c) Calculate the length x .
23. The square and the regular hexagon shown have perimeters in the ratio 8:5.



- (a) Find the perimeter of the square.
(b) Calculate the perimeter of the hexagon.
(c) How long is each side of the hexagon?

24. Claude is mixing blue and red paint in the ratio 5:3 to obtain a version of the colour purple.
Claude has 200 millilitres of blue paint and 140 millilitres of red paint.
What is the maximum amount of purple paint he can make?



25. Debbie is making a drink by mixing mango juice and papaya juice in the ratio 2:3.
She has 150 millilitres of mango juice and 180 millilitres of papaya juice.
What is the maximum amount of the drink she can make?

26. A metal alloy is made by mixing copper and tin in the ratio 7:4.
There is 280 kilograms of copper and 200 kilograms of tin available.
What is the largest weight of alloy that can be made?

27. A recipe requires flour and sugar to be mixed by weight in the ratio 7:3.
There is 400 grams of flour available and 150 grams of sugar.
What is the maximum weight of the mixture that can be obtained?



28. Sandeep is creating a blend of tea by mixing Assam and Darjeeling teas in the ratio 4:3. He has 300 grams of Assam tea and 240 grams of Darjeeling tea.
What is largest weight of the blend he can produce?



29. Neil is making chocolate brownies. To do this he starts by mixing chocolate and butter in the ratio 5:4.
He has 400 grams of chocolate and 350 grams of butter.
What is the weight of the largest mixture he can obtain?



30. Amanda is making mortar by mixing sand and cement in the ratio 7:2.
She has 77 kilograms of sand and 24 kilograms of cement.
What is the largest weight of mortar Amanda can make?

