WRITING AND SIMPLIFYING RATIO

Task 1

1) Write the ratio of red to blue circles.

1 : 4

2) Write the ratio of circles to triangles.

2 : 3

3) A class has 15 right-handed pupils and 4 left-handed pupils. Write the ratio of right-handed to left-handed pupils.

R : L

15 : 4

4) A box contains 5 apples, 10 bananas, and 15 oranges. Write the ratio of apples to bananas to oranges. Give your answer in simplest form.

A : B : O

5 : 10 : 15

1 : 2 : 3

5) A pattern has 20 triangles and 25 squares. Write the ratio of triangles to squares.

T : S

20 : 25

4 : 5

6) A bag has 9 red counters, 6 blue counters and 3 green counters. Write the ratio of red to blue to green counters. Give your answer in simplest form.

R : B : G

9 : 6 : 3

3 : 2 : 1

7) Write the ratio 12 to 8 in simplest form.

12 : 8

3 : 2

8) Write the ratio 15 to 25 in simplest form.

15 : 25

3 : 5

9) Write the ratio 20 to 30 to 40 in simplest form.

20 : 30 : 40

2 : 3 : 4

10) Write the ratio 9 to 12 in simplest form.

9 : 12

3 : 4

11) Write the ratio 18 to 24 in simplest form.

18 : 24

3 : 4

12) Write the ratio 10 to 5 to 15 in simplest form.

10 : 5 : 15

2 : 1 : 3

13) Write the ratio 21 to 14 in simplest form.

21 : 14

3 : 2

14) Write the ratio 100 to 80 in simplest form.

100 : 80

5 : 4

15) Write the ratio 16 to 12 to 8 in simplest form.

16 : 12 : 8

4 : 3 : 2

16) Write the ratio 36 to 60 in simplest form.

$36 : 60$

3 : 5

17) Write the ratio 25 to 15 in simplest form.

$25 : 15$

5 : 3

18) Write the ratio 30 to 10 in simplest form.

$30 : 10$

3 : 1

19) Write the ratio 28 to 42 in simplest form.

$28 : 42$

2 : 3

20) Write the ratio 64 to 48 in simplest form.

$64 : 48$

4 : 3

21) Write the ratio 81 to 108 in simplest form.

$81 : 108$

3 : 4

22) Write the ratio 12 to 6 to 18 in simplest form.

$12 : 6 : 18$

2 : 1 : 3

Task 2 – Fully simplify each of the following ratios.

23) 8 : 12

2 : 3

24) 35 : 70

1 : 2

25) 50 : 75

2 : 3

26) 500 g to 2 kg

$500\,g : 2\,kg$

$500\,g : 2000\,g$

1 : 4

27) 3 m to 50 cm

$3\,m : 50\,cm$

$300\,cm : 50\,cm$

6 : 1

28) 2.5 kg to 500 g

$2.5\,kg : 500\,g$

$2500\,g : 500\,g$

5 : 1

29) 1.2 cm to 400 mm

$1.2\,cm : 400\,mm$

$12\,mm : 400\,mm$

3 : 100

30) 45 minutes to 2 hours

$45\,minutes : 2\,hours$

$45\,minutes : 120\,minutes$

3 : 8

31) £4 to 200p

$£4 : 200p$

$400p : 200p$

2 : 1

32) 3 litres to 750 ml

$3\,l : 750\,ml$

$3000\,ml : 750\,ml$

4 : 1

33) 1 hour to 20 minutes

$1\,hour : 20\,minutes$

$60\,minutes : 20\,minutes$

3 : 1

34) 2 kg to 1500 g

$2\,kg : 1500\,g$

$2000\,g : 1500\,g$

4 : 3

35) 80 cm to 2 m

$$80\ cm : 2\ m$$

$$80\ cm : 200\ cm$$

2 : 5

Task 3

36) A recipe calls for 200 g of flour and 100 g of sugar. Write the ratio flour to sugar. Give your answer in simplest form.

$$F : S$$

$$200 : 100$$

2 : 1

37) A classroom has 30 pens and 45 pencils. Write the ratio of pens to pencils. Give your answer in simplest form.

$$Pens : Pencils$$

$$30 : 45$$

2 : 3

38) A football team wins 18 games, draws 6, and loses 12. Write the ratio of wins to draws to loses. Give your answer in simplest form.

$$W : D : L$$

$$18 : 6 : 12$$

3 : 1 : 2

39) A box contains red, blue and green pens. There are three times as many red pens as blue pens. There are twice as many green pens as red pens. Write the ratio of red to blue to green pens.

$$R : B : G$$

3 : 1 : 6

40) A bag contains blue, yellow and orange counters. There are twice as many yellow counters as blue counters. There are 5 times as many yellow counters as orange counters. Write the ratio of blue to yellow to orange counters.

$$B : Y : O$$

$$1 : 2 : \frac{2}{5}$$

5 : 10 : 2

41) James, Charlie and Tom go to football practice. James scored five times as many goals as Charlie. Tom scored a third the number of goals as James. Write the ratio of James to Charlie's to Tom's goals.

$$J : C : T$$

$$5 : 1 : \frac{5}{3}$$

15 : 3 : 5

Task 4

42) Write the ratio 15 : 30 in the form 1 : n
   1 : 2

43) Write the ratio 2 : 8 in the form 1 : n
   1 : 4

44) Write the ratio 9 to 4 in the form n : 1
   2.25 : 1

45) Write the ratio 4 to 15 in the form 1 : n
   1 : 3.75

46) Write the ratio 4.5 : 1.5 in the form n : 1
   3 : 1

47) Write the ratio 10 : 32 in the form 1 : n
   1 : 3.2

48) Write the ratio 30 : 120 in the form n : 1
   0.25 : 1

49) There are 16 counters in a bag. 5 are red the rest are blue. Write the ratio of red to blue counters in the form 1 : n.

$$R : B$$

$$5 : 11$$

1 : 2.2

50) In a room, $\frac{2}{9}$ of the people are left-handed. Write the ratio of left-handed to right-handed people in the form 1 : n.

$$L : R$$

$$2 : 7$$

$$\mathbf{1 : 3.5}$$

51) $\frac{4}{9}$ of sweets in a box are red, and the rest are blue. Write the ratio of red sweets to blue sweets in the form n : 1.

$$R : B$$

$$4 : 5$$

$$\mathbf{0.8 : 1}$$

Challenge

52) A bag contains 15 red counters and 30 blue counters. Some red counters were added so that the ratio of red to blue counters is now 5 : 6. Work out the number of red counters that were added.

$$R : B$$

$$15 : 30$$

The parts of blue remain the same

$$30 \div 6 = 5$$

Multiply both parts of the ratio by 5:

$$5 : 6$$

$$25 : 30$$

Red counters added:

$$25 - 15 = \mathbf{10}$$

53) A jar contains 27 green counters and 45 yellow counters. Green counters are added so that the ratio of green to yellow counters is now 4 : 5. How many green counters were added?

$$G : Y$$

$$27 : 45$$

The parts of yellow remain the same:

$$45 \div 5 = 9$$

Multiply both parts of the ratio by 9:

$$4 : 5$$

$$36 : 45$$

Green counters added:

$$36 - 27 = \mathbf{9}$$

54) A box contains 18 red counters and 42 blue counters. First, some red counters are added. Then 10 blue counters are removed. After these changes, the ratio of red to blue counters is 5 : 4. How many red counters were added?

$$R : B$$

$$18 : 42$$

10 blue counters are removed:

$$x : 32$$

$$32 \div 4 = 8$$

Multiply both parts of the ratio by 8:

$$5 : 4$$

$$40 : 32$$

Red counters added:

$$40 - 18 = \mathbf{22}$$