Ratio in the form n : 1

SCAN ME

REVISE THIS TOPIC

1 Write 6 : 4 in the form n : 1 **[1 mark]**

÷2 (6 : 4) ÷2

(3 : 2)

÷2 (1·5 : 1) ÷2

Answer 1·5 : 1

2 Write 18 : 12 in the form n : 1 **[1 mark]**

÷6 (18 : 12) ÷6

(3 : 2)

÷2 (1·5 : 1) ÷2

Answer 1·5 : 1

3 Write 14 : 10 in the form n : 1 **[1 mark]**

÷10 (14 : 10) ÷10

(1·4 : 1)

Answer 1·4 : 1

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4 Write 15 : 6 in the form n : 1 **[2 marks]**

÷3 (15 : 6) ÷3
÷2 (5 : 2) ÷2
2·5 : 1

Answer 2·5 : 1

5 Write 10 : 8 in the form n : 1 **[2 marks]**

÷2 (10 : 8) ÷2
÷2 (5 : 4) ÷2
÷2 (2·5 : 2) ÷2
1·25 : 1

Answer 1·25 : 1

6 Write 42 : 12 in the form n : 1 **[2 marks]**

÷2 (42 : 12) ÷2
÷3 (21 : 6) ÷3
÷2 (7 : 2) ÷2
3·5 : 1

Answer 3·5 : 1

7 Write 44 : 20 in the form n : 1 **[2 marks]**

÷4 (44 : 20) ÷4
÷5 (11 : 5) ÷5
2·2 : 1

$5\overline{)11\cdot0}$ = 2·2

Answer 2·2 : 1

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8 Write 8 : 60 in the form 1 : n **[2 marks]**

÷4 (8 : 60) ÷4

2 : 15

÷2 (1 : 7·5) ÷2

Answer 1 : 7·5

9 Write 7 : 10 in the form n : 1 **[1 mark]**

÷10 (7 : 10) ÷10

0·7 : 1

Answer 0·7 : 1

10 Write 99 : 18 in the form n : 1 **[2 marks]**

÷9 (99 : 18) ÷9

11 : 2

÷2 (5·5 : 1) ÷2

Answer 5·5 : 1

11 Write 3 : 4 in the form n : 1 **[1 mark]**

÷4 (3 : 4) ÷4

3/4 : 1

0·75 : 1

$$4\overline{)3.^{3}0^{2}0}\quad 0.75$$

Answer 0·75 : 1

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12 Write 36 : 25 in the form n : 1 **[1 mark]**

$36 \div 25 = 1.44$

Answer 1.44 : 1

13 Write 48 : 15 in the form n : 1 **[1 mark]**

$48 \div 15 = 3.2$

Answer 3.2 : 1

14 Write 81 : 50 in the form n : 1 **[1 mark]**

$81 \div 50 = 1.62$

Answer 1.62 : 1

15 Write 67 : 20 in the form n : 1 **[1 mark]**

$67 \div 20 = 3.35$

Answer 3.35 : 1

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16 Write 25 : 68 in the form 1 : n **[1 mark]**

$68 \div 25 = 2.72$

Answer 1 : 2.72

17 Write 117 : 45 in the form n : 1 **[1 mark]**

$117 \div 45 = 2.6$

Answer 2.6 : 1

18 Write 87 : 25 in the form n : 1 **[1 mark]**

$87 \div 25 = 3.48$

Answer 3.48 : 1

19 Write 1080 : 25 in the form n : 1 **[1 mark]**

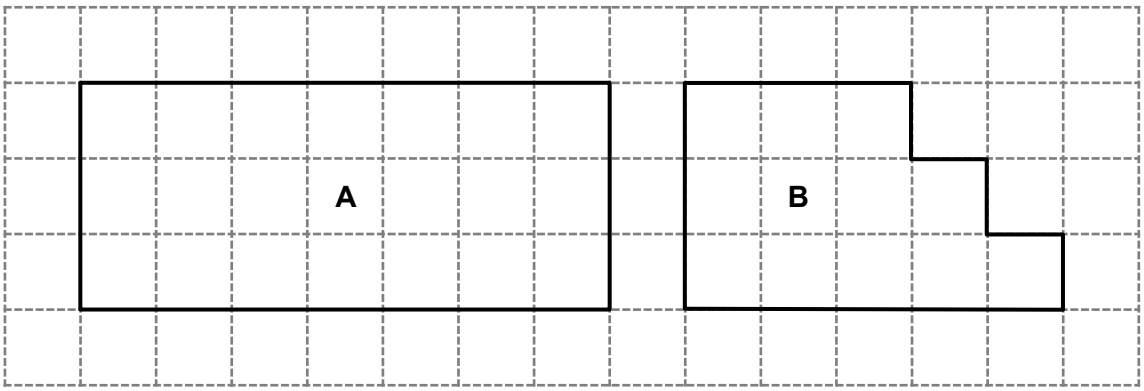
$1080 \div 25 = 43.2$

Answer 43.2 : 1

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20 Shape **A** and shape **B** are drawn on a centimetre grid.



20 (a) Write area of shape A : area of shape B in the form n : 1 **[2 marks]**

÷3 (21 : 12) ÷3
÷4 (7 : 4) ÷4
1·75 : 1

Answer 1·75 : 1

20 (b) Write perimeter of shape A : perimeter of shape B in the form n : 1 **[2 marks]**

÷4 (20 : 16) ÷4
÷4 (5 : 4) ÷4
1·25 : 1

Answer 1·25 : 1

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21 Write £2.50 : 20p in the form n : 1 **[2 marks]**

250 : 20 ÷10
25 : 2 ÷10
12.5 : 1 ÷2

Answer 12.5 : 1

22 Write 3 m : 80 cm in the form n : 1 **[3 marks]**

300 : 80 ÷10
30 : 8 ÷2
15 : 4 ÷2
7.5 : 2 ÷2
3.75 : 1 ÷2

Answer 3.75 : 1

23 Write 4.2 kg : 750 g in the form n : 1 **[2 marks]**

4200 : 750

4200 ÷ 750 = 5.6

Answer 5.6 : 1

11

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24 The table shows information about students from Y10 and Y11 and if they were on time for school or late.

	On time	Late
Y10	96	24
Y11	69	20

24 (a) Write the ratio of Y10 students who were late to Y11 students who were late.
Give your answer in the form n : 1 **[1 mark]**

24 : 20 $\quad$ 24 ÷ 20 = 1·2

Answer 1·2 : 1

24 (b) Write the ratio of students who were on time to students who were late.
Give your answer in the form n : 1 **[2 marks]**

96 + 69 = 165

24 + 20 = 44

165 ÷ 44 = 3·75

Answer 3·75 : 1

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25 Write $6^2 : 2^3$ in the form $n : 1$ **[3 marks]**

$6^2 = 6 \times 6 = 36$

$2^3 = 2 \times 2 \times 2 = 8$

$\div 4 \left(36 : 8 \right) \div 4$

$\div 2 \left(9 : 2 \right) \div 2$

$4.5 : 1$

Answer 4.5 : 1

26 Write $2^{12} : 2^4$ in the form $n : 1$, where n is an integer. **[3 marks]**

$\div 2^4 \left(2^{12} : 2^4 \right) \div 2^4$

$2^8 : 1$

$2^8 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$

$= 256$

Answer 256 : 1

27 Write $7 \times 10^3 : 2 \times 10^2$ in the form $n : 1$ **[3 marks]**

$\div 100 \left(7000 : 200 \right) \div 100$

$\div 2 \left(70 : 2 \right) \div 2$

$35 : 1$

Answer 35 : 1

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28 84% of visitors to a gym are members.

Write the ratio of visitors who are members to visitors who are **not** members.

Give your answer in the form n : 1 **[2 marks]**

100 − 84 = 16

84 : 16

84 ÷ 16 = 5·25

Answer 5·25 : 1

29 The sizes of two of the angles in a triangle are 44° and 104°
Write the ratio of the size of the largest angle to the size of the smallest angle.
Give your answer in the form n : 1 **[3 marks]**

44 + 104 = 148

180 − 148 = 32

104 : 32

104 ÷ 32 = 3·25

Answer 3·25 : 1

30 Write 2 days : 50 minutes in the form n : 1 **[3 marks]**

2 x 24 x 60 = 2880

2880 : 50

2880 ÷ 50 = 57·6

Answer 57·6 : 1

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31 Write $\sqrt{64} : \sqrt{25}$ in the form $n : 1$ **[3 marks]**

$8 : 5$

$\div 5$ ↓ $\div 5$

$1.6 : 1$

$5 \overline{)8.^{3}0}$ $\quad 1.6$

Answer 1.6 : 1

32 Write $\frac{3}{5} : \frac{6}{7}$ in the form $n : 1$ **[3 marks]**

$\frac{3}{5} \div \frac{6}{7} = \frac{3}{5} \times \frac{7}{6}$

$= \frac{21}{30}$

$= \frac{7}{10}$

Answer 0.7 : 1

33 Write $3\frac{1}{2} : 1\frac{1}{4}$ in the form $n : 1$ **[3 marks]**

$3\frac{1}{2} \div 1\frac{1}{4} = \frac{7}{2} \div \frac{5}{4}$

$= \frac{7}{2} \times \frac{4}{5}$

$= \frac{28}{10}$

Answer 2.8 : 1

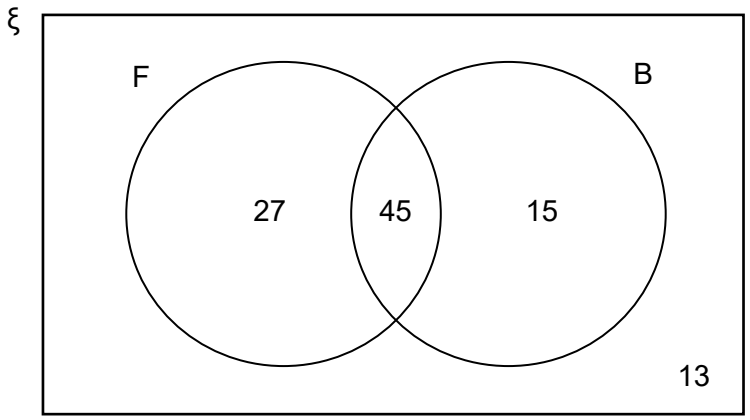
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34 100 students were asked if they play football or basketball.

ξ = 100 students surveyed
F = student plays football
B = student plays basketball



34 (a) Write the ratio

Students who play football : students who play basketball

Give your answer in the form n : 1 **[3 marks]**

27 + 45 = 72
45 + 15 = 60

72 : 60
72 ÷ 60 = 1·2

Answer 1·2 : 1

34 (b) Write the ratio

Students who play basketball : students who do **not** play basketball

Give your answer in the form n : 1 **[3 marks]**

45 + 15 = 60
27 + 13 = 40

60 : 40
÷20 ↓ ↓ ÷20
3 : 2
÷2 ↓ ↓ ÷2
1·5 : 1

Answer 1·5 : 1

6