

Scaling Ratios

Practice Worksheet (Foundation Tier)

I DO

The ratio of red to blue counters is $y : 4$.

There are 35 red and 20 blue counters.

Work out y .

WE DO

The ratio of green to yellow counters is $x : 3$.

There are 24 green and 9 yellow counters.

Work out x .



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YOU DO 1

The ratio of black to white counters is $a : 5$.

There are 42 black and 30 white counters.

Work out a .

YOU DO 2

The ratio of pink to purple counters is $2 : b$.

There are 16 pink and 40 purple counters.

Work out b .

CHALLENGE

The ratio of boys to girls in a school is $3 : x$.

There are 45 boys.

The total number of students is 105.

Work out x .

PRACTICE PERFECT

Solve the following scaling ratio problems. Show your working.

1) Ryan and Katie share sweets in the ratio $y : 3$.
Ryan has 20 sweets and Katie has 12 sweets.
Work out y .

2) Catherine and Tom share money in the ratio $4 : x$. Catherine has £32 and Tom has £40. Work out x .

3) Steve and Mark share cards in the ratio $a : 7$.
Steve has 18 cards and Mark has 42 cards.
Work out a .

4) John and Emily collect stamps in the ratio $5 : b$. John has 45 stamps and Emily has 27 stamps.
Work out b .

5) Kate and Rob share a prize in the ratio $y : 8$.
Kate receives £35 and Rob receives £56. Work out y .

6) Paige, Sophie, and Sarah share counters in the ratio $2 : x : 5$. Paige has 12 counters, Sophie has 18 counters, and Sarah has 30 counters.
Work out x .

7) Emma and Vicky share marbles. The ratio of Emma's to Vicky's marbles is $3 : y$. Emma has 24 marbles. The total number of marbles is 88.
Work out y .



ANSWERS & WORKED SOLUTIONS

I Do

Step 1: Write the known amounts as a ratio. Red : Blue = 35 : 20

Step 2: Compare this to the simplified ratio $y : 4$.

Step 3: To get from 20 to 4, divide by 5.

Step 4: Do the same to the red amount. $35 \div 5 = 7$.

Answer: $y = 7$

We Do

Step 1: Green : Yellow = 24 : 9

Step 2: Simplified ratio is $x : 3$.

Step 3: To get from 9 to 3, divide by 3.

Step 4: $24 \div 3 = 8$.

Answer: $x = 8$

You Do 1

Step 1: Black : White = 42 : 30

Step 2: Simplified ratio is $a : 5$.

Step 3: $30 \div 6 = 5$. Therefore, do $42 \div 6$.

Answer: $a = 7$

You Do 2

Step 1: Pink : Purple = 16 : 40

Step 2: Simplified ratio is $2 : b$.

Step 3: $16 \div 8 = 2$. Therefore, do $40 \div 8$.

Answer: $b = 5$

Challenge

Step 1: Find the number of girls. Total = 105. Girls = $105 - 45 = 60$.

Step 2: Write the ratio. Boys : Girls = 45 : 60

Step 3: Simplified ratio is $3 : x$.

Step 4: To get from 45 to 3, divide by 15.

Step 5: $60 \div 15 = 4$.

Answer: $x = 4$

Practice Perfect

1) $20 : 12 \rightarrow y : 3$. ($12 \div 4 = 3$). $20 \div 4 = 5$. **$y = 5$**

2) $32 : 40 \rightarrow 4 : x$. ($32 \div 8 = 4$). $40 \div 8 = 5$. **$x = 5$**

3) $18 : 42 \rightarrow a : 7$. ($42 \div 6 = 7$). $18 \div 6 = 3$. **$a = 3$**

4) $45 : 27 \rightarrow 5 : b$. ($45 \div 9 = 5$). $27 \div 9 = 3$. **$b = 3$**

5) $35 : 56 \rightarrow y : 8$. ($56 \div 7 = 8$). $35 \div 7 = 5$. **$y = 5$**

6) $12 : 18 : 30 \rightarrow 2 : x : 5$. (Divide all by 6). $18 \div 6 = 3$. **$x = 3$**

7) Vicky = $88 - 24 = 64$. Ratio $24 : 64 \rightarrow 3 : y$. ($24 \div 8 = 3$). $64 \div 8 = 8$. **$y = 8$**

