

# Ratio and Proportion Cheat Sheet

Simplify ratios, find equivalent ratios and solve proportions

## Simplify a ratio

Divide every part by the greatest common factor.  $12 : 18$ , divided by 6, is  $2 : 3$ . For decimals, multiply first:  $1.5 : 2 = 15 : 20 = 3 : 4$ .

## Equivalent ratios

Multiply or divide every part by the same number.  $2 : 3 = 4 : 6 = 6 : 9 = 10 : 15$ .

## Solve a proportion (missing number)

If  $a : b = c : ?$ , then  $? = b \times c \div a$ . Example:  $3 : 4 = 9 : ?$  gives  $? = 4 \times 9 \div 3 = 12$ .

## Part to whole

In a ratio of  $2 : 3$  there are 5 parts in total, so the first part is  $\frac{2}{5}$  (40%) and the second is  $\frac{3}{5}$  (60%) of the whole.

## Practice (answers on the right)

| # | Question                      | Answer      |
|---|-------------------------------|-------------|
| 1 | Simplify $15 : 25$            | $3 : 5$     |
| 2 | Simplify $24 : 36 : 60$       | $2 : 3 : 5$ |
| 3 | $2 : 5 = 8 : ?$               | 20          |
| 4 | $6 : 9 = ? : 15$              | 10          |
| 5 | Share 40 in the ratio $3 : 5$ | 15 and 25   |
| 6 | Simplify $0.5 : 2$            | $1 : 4$     |