

## Foundation GCSE Maths Knowledge Organiser. Ratio.

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| <p style="text-align: center;"><b>Simplifying Ratios</b></p> <p>Example</p> <p>Simplify</p> <div style="text-align: center;"> <math>\div 5 \quad \begin{array}{c} \curvearrowright 15 : 20 \\ \quad \quad \quad \curvearrowleft 3 : 4 \end{array} \quad \div 5</math> </div> <p><i>To simplify a ratio, you need to divide by a common factor.</i></p>  | <p style="text-align: center;"><b>Giving Ratios as Fractions</b></p> <p>Example</p> <p>Aaron and Billy share some money in the ratio 5:4.<br/>What fraction do they each receive?</p> <p>5 + 4 = 9 shares in total</p> <p>Aaron = <math>\frac{5}{9}</math> and Billy = <math>\frac{4}{9}</math></p> <p><i>Add the shares to find the denominator of the fraction.</i></p>  | <p style="text-align: center;"><b>Ratios in the form n:1</b></p> <p>Example</p> <div style="text-align: center;"> <math>\div 8 \quad \begin{array}{c} \curvearrowright 14 : 8 \\ \quad \quad \quad \curvearrowleft 1.75 : 1 \end{array} \quad \div 8</math> </div> <p>so n = 1.75</p> <p><i>Divide by the part of the ratio that needs to become 1.</i></p>  |
| <p style="text-align: center;"><b>Sharing in a Given Ratio</b></p> <p>Example</p> <p>Share £540 in the ratio 4:5</p> <p>4 + 5 = 9 (total number of shares)<br/> <math>\pounds 540 \div 9 = \pounds 60</math> (amount of one share)<br/>         4 x £60 = £240<br/>         5 x £60 = £300<br/>         (check that £240 + £300 adds up to £540)</p> <p><i>You always need to divide to find one share.</i></p> | <p style="text-align: center;"><b>Ratios Where One Part is Known</b></p> <p>Example</p> <p>John and Sally share some money in the ratio 4:7. If John received £64, how much money is shared in total?</p> <p><math>\pounds 64 \div 4 = \pounds 16</math> (one share)<br/>         7 x £16 = £112 (Sally's share)<br/> <math>\pounds 64 + \pounds 112 = \pounds 176</math> (total amount of money)</p> <p><i>You always need to divide to find one share.</i></p> | <p style="text-align: center;"><b>Ratios Where the Difference is Known</b></p> <p>Example</p> <p>Barry and Paul share some money in the ratio 3:7. If Barry gets £80 less than Paul, how much do they each receive</p> <p>7 – 3 = 4 shares<br/> <math>\pounds 80 \div 4 = \pounds 20</math> (one share)<br/>         3 x £20 = £60 (Barry's share)<br/>         7 x £20 = £140 (Paul's share)</p> <p><i>You always need to divide to find one share.</i></p> |