

**Dividing into a ratio (including decimals and worded problems)**

**Green (3a)**

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| 1. In a necklace, Sam uses 1 red bead for every 2 beads in a pattern. If Sam uses 6 red beads, how many blue beads will he use? 2. Mr Maths always has 4 biscuits with his cup of tea. On Wednesday he has 3 cups of tea. How many biscuits does he have? | 1. If 10 people play a fruit machine, it will let 3 of them win. 20 people play the fruit machine, how many win? 2. A dice lands on a six once every 6 times it is thrown. The dice landed on 6 five times. How many times was it thrown? |

**Extension (4c)**: Mr Maths is now on a diet and so only has 2 biscuits for every cup of tea he has. On Friday he had 5 biscuits. How many cups of tea did he have?

**Amber (4a)**

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| 1. Sam and Ben start a car washing business. Sam paid for all of the buckets and sponges, so they agree to split the profits in the ratio 3:2. Last week they made £55 profit. How much did Sam and Ben each get? 2. In ‘calculus cake’ sugar and flour are mixed in the ratio 4:5. 90g of ‘calculus cake’ mixture is needed. How much sugar and flour do they need? | 1. Squash and water are mixed in the ratio 3:7. 400ml of drink is needed. How much squash and water is required? 2. When making concrete, one shovel of cement is needed for every 5 shovels of sand. To fill the mixer you need to put in 18 shovels of sand/cement. How many of each should you put in? |

**Extension (5c)**: Because Andy is older, he gets more pocket money than Bob. Their pocket money is set in the ratio of 4:3. In December Andy got £12 pocket money, how much did Bob get?

**Red (6c)**

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| 1. Jim and Ursula run a painting business. Jim set up the business and Ursula joined later, so they agree to split all profits in the ratio 5:2. Last month they made £4321.43. How much money do the each get? 2. To make ‘Pascal Pie’ you need flour, salt and powdered garlic in the ratio 6:1:2. You need to produce 400g of ‘Pascal Pie’ mixture. How much of each ingredient do you need? | 1. Mr Maths has started a new fitness programme called “7-6-5”. He spends his time running, cycling and swimming in the ratio 7:6:5. On Tuesday, he spends 51 minutes exercising. How long did he spend swimming? 2. To make ‘Pythagoras Cake’ you have to mix flour, sugar, salt and powdered milk in the ratio 7:1:2:3. If you make 900g of mixture, how much of each ingredient do you need? |

**Extension (6a)**: Penny, Oliver, Gemma and Wendy share money in the ratio 4:3:2:7. If Wendy gets £1.47, how much do the others get?

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**SOLUTIONS: Dividing into a ratio (including decimals and worded problems)**

**Green (3a)**

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| --- | --- |
| 1. In a necklace, Sam uses 1 red bead for every 2 beads in a pattern. If Sam uses 6 red beads, how many blue beads will he use? **12** 2. Mr Maths always has 4 biscuits with his cup of tea. On Wednesday he has 3 cups of tea. How many biscuits does he have? **12** | 1. If 10 people play a fruit machine, it will let 3 of them win. 20 people play the fruit machine, how many win? **6** 2. A dice lands on a six once every 6 times it is thrown. The dice landed on 6 five times. How many times was it thrown? **30** |

**Extension (4c)**: Mr Maths is now on a diet and so only has 2 biscuits for every cup of tea he has. On Friday he had 5 biscuits. How many cups of tea did he have? **2.5 (he spilt half the cup)**

**Amber (4a)**

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| --- | --- |
| 1. Sam and Ben start a car washing business. Sam paid for all of the buckets and sponges, so they agree to split the profits in the ratio 3:2. Last week they made £55 profit. How much did Sam and Ben each get? **Sam £33 and Ben £22** 2. In ‘calculus cake’ sugar and flour are mixed in the ratio 4:5. 90g of ‘calculus cake’ mixture is needed. How much sugar and flour do they need? **40g Sugar, 50g flour.** | 1. Squash and water are mixed in the ratio 3:7. 400ml of drink is needed. How much squash and water is required? **120ml squash, 280ml water.** 2. When making concrete, one shovel of cement is needed for every 5 shovels of sand. To fill the mixer you need to put in 18 shovels of sand/cement. How many of each should you put in? **3 cement, 15 sand.** |

**Extension (5c)**: Because Andy is older, he gets more pocket money than Bob. Their pocket money is set in the ratio of 4:3. In December Andy got £12 pocket money, how much did Bob get? **£9**

**Red (6c)**

|  |  |
| --- | --- |
| 1. Jim and Ursula run a painting business. Jim set up the business and Ursula joined later, so they agree to split all profits in the ratio 5:2. Last month they made £4321.43. How much money do the each get? **£3086.74 and £1234.69** 2. To make ‘Pascal Pie’ you need flour, salt and powdered garlic in the ratio 6:1:2. You need to produce 400g of ‘Pascal Pie’ mixture. How much of each ingredient do you need? **267g, 44.4g, 88.9g (3sf)** | 1. Mr Maths has started a new fitness programme called “7-6-5”. He spends his time running, cycling and swimming in the ratio 7:6:5. On Tuesday, he spends 51 minutes exercising. How long did he spend swimming? **14.2mins (14mins, 10 seconds)** 2. To make ‘Pythagoras Cake’ you have to mix flour, sugar, salt and powdered milk in the ratio 7:1:2:3. If you make 900g of mixture, how much of each ingredient do you need? **485g, 69.2g, 138g, 208g.** |

**Extension (6a)**: Penny, Oliver, Gemma and Wendy share money in the ratio 4:3:2:7. If Wendy gets £1.47, how much do the others get? **Penny = £0.84 , Oliver = £0.63 , Gemma = £0.42 .**