	Whole numb	ers			
	Use the ladder method to find the prime factors of 180.		$\begin{array}{c ccccc} 2 & 180 & 1 \text{ is not} \\ \hline 2 & 90 & 2 \times 2 \times 3 \\ \hline 3 & 45 & \text{The prim} \\ \hline 3 & 15 & 2; 3 \text{ and} \\ \hline 5 & 5 & \\ & 1 & \\ \end{array}$	<b>Example</b> a prime number and $3 \times 3 \times 5 = 180$ . ne factors of 180 are 5.	
1.	Write down the first six multiples of each of the following numbers.				
	<ul> <li>a) Multiples of 4: ; ; ;</li> <li>c) Multiples of 15: ; ;</li> </ul>	; ; ;	<ul><li><b>b)</b> Multiples of 2</li><li><b>d)</b> Multiples of 2</li></ul>	0: ; ; ; ; ; ; 5: ; ; ; ; ; ;	
2.	<ul> <li>Use the answers in Question</li> <li>a) The LCM of 15 and 20 is</li> <li>b) The LCM of and 25</li> <li>c) 20 is the LCM of an</li> <li>d) 75 is the LCM of an</li> </ul>	1 to complete is 100. d . d .	the following. Re LCM mean HCF means	eminder s lowest common multiple. s highest common factor.	
3.	Use the ladder method to fin a) 360	d the prime fa <b>b)</b> 440	ctors of the followin	ng numbers: c) 140	
<b>4</b> .	Write each number as a product of its prime numbers.				
	a)	<b>b</b> )		c)	
5.	Now write down: <b>a)</b> the HCF of 360 and 440	Jow write down:         a) the HCF of 360 and 440         b) the HCF of 360, 440 and 140.			
6.	A: Fourth multiple of 3 B: Fifth multiple of 2 C: Product of A and B Factors of C that are also multiples of 10	P: Sum of 30 an Q: Uneven prim R: Quotient of F Two multiples of 100	ach block. ad 15 ↓ he factor of 6 ↓ P and Q ↓ f R greater than Pr	X: 1 + 8 × 5 ↓ Product of all the factors of 9 ↓ M: Difference between K and L ↓ ime factors of M	



## Whole numbers

## Problem solving - ratio, rate, financial

## Example

The batter for cupcakes must be mixed in the ratio 6:3:2 for flour : sugar : butter. How many cups of each ingredient were used for the cake sale if 55 cups of ingredients were used in total? 6+3+2=11Sugar:  $\frac{3}{11} \times 55 = 15$  cups of sugar Flour:  $\frac{6}{11} \times 55 = 30$  cups of flour Butter:  $\frac{2}{11} \times 55 = 10$  cups of butter

- **1.** Michael and Frieda make cupcakes and sell them. On Tuesdays they make the cupcakes green, yellow and pink in the ratio of 2 : 3 : 7.
- **a)** How many cupcakes must be pink if they bake 60 cupcakes? **b)** How many yellow cupcakes did they make if there were 40 green cupcakes? 2. The cupcakes are sold at R30 for four cupcakes. What is the selling price for: **b)** 6 cupcakes **c)** 40 cupcakes? a) 2 cupcakes **3.** How many cupcakes did a customer buy if the following amounts were paid: **b)** R75 **c)** R52,50? **a)** R60 **4.** On Thursdays customers get a discount of 8% if they buy 10 cupcakes. How much will a customer now pay for 10 cupcakes? 5. What will the new price for four cupcakes be if the original selling price is: **a)** increased in a ratio of 5 : 6 **b)** decreased in a ratio of 6 : 5? 6. The business needs new equipment that costs R10 000. There are two options.

Option A: Buy the equipment on hire purchase. The deposit is 10% of the selling price. There will be a monthly instalment of R533 for 30 months. Option B: Take a loan of R10 000 from a friend. The friend asks 14% interest per year and is willing to lend the money for 30 months.

Show all the necessary calculations to help them decide on the better option.

- **7.** Frieda delivers cupcakes if the order is big enough.
  - **a)** How long will it take her to travel 20 km if she drives at 80 km per hour?
  - **b)** How far did she drive if she travelled for half an hour at 90 km per hour?
  - c) What was her average speed if it took 2 hours to drive a distance of 140 km?

