Maths Revision & Practice Booklet

Name: _____

Multiplication and Division

Revise

Multiply Numbers Using the Formal Written Methods of Short and Long Multiplication

We can use short multiplication when we are multiplying any number by a **one-digit** number.

Starting at the **right-hand side**, multiply each digit in the top number by the one-digit number.

We can only write a single digit in each column, so if the product is a two-digit number, we must **regroup** the number and place into the next column. When we regroup, we must remember to add this number to the multiplication answer of the next digit.

		6	2	8
×				7
4	**3**	**9**	**6**	
		1	**5**	

We can use long multiplication when we are multiplying numbers that have **two or more digits**.

Multiply each digit in the top number by the first digit in the multiplier, regrouping and placing into the next column if necessary. Strike the regrouped numbers once you have your first answer so that you don't confuse any new regroupings.

On the next row, place a zero to show that you are about to multiply a power of ten. Then, multiply each digit in the top number by the next digit in the multiplier, regrouping and placing into the next column if necessary.

Finally, add the digits in each column using column addition to find the answer to the multiplication.

	3	1 7	2	
		5	8	3
	×		4	9
	5	**2**	**4**	**7**
2	**3**	**3**	**2**	**0**
2	**8**	**5**	**6**	**7**

+

Revise

Divide Numbers Using the Formal Written Methods of Short and Long Division

We can use short division when we are dividing a number by a **one-digit number**.

Start by dividing the first digit of the dividend (the number that is being divided) by the divisor (the number that it is being divided into).

		1	**2**	**3**	**2**
6	7	³3	¹9	¹2	

Write the answer above the horizontal line and regroup any remainder to the next digit.

Repeat the process until you are left with no remainder or until you have found the answer to the appropriate number of decimal places.

We can use long division when we are dividing a number by a **two-digit number** or larger.

Start by dividing the first two digits of the dividend by the divisor. Write the answer above the horizontal line and the multiple of the divisor under the dividend.

Use column subtraction to calculate the remainder and draw down the next digit of the dividend.

Repeat this process until the end of the calculation.

		0	**2**	**8**	**4**
1	5	4	2	6	0
	−	**3**	**0**		
		1	**2**	**6**	
	−	**1**	**2**	**0**	
				6	**0**

Revise

Interpret Remainders as Appropriate for the Context

When the number being divided is not a multiple of the divisor, we get a remainder. A remainder can be written as a whole number, a fraction or a decimal.

Remainder	Example
Whole Number	137 ÷ 5 = 27 r 2
Fraction	137 ÷ 5 = 27 $\frac{2}{5}$
Decimal	137 ÷ 5 = 27.4

For word problems involving remainders, we usually have to round the remainder up or down depending on the context.

Use Knowledge of the Order of Operations

If a calculation or problem involves more than one operation, it is important to do the operations in the correct order.

Brackets	Calculations inside a bracket are always worked out first.	63 ÷ **(**25 - 16**)** = 63 ÷ 9 = 7
Orders/Indices	Orders or indices refer to square numbers or cube numbers. These should be calculated next.	8**²** ÷ 4 = 64 ÷ 4 = 16
Division Multiplication	Now calculate any multiplication or division in the order they appear from left to right.	2 **×** 7 + 63 **÷** 9 = 14 + 7 = 21
Addition Subtraction	Finally, calculate any addition or subtraction in the order they appear from left to right.	81 **-** 24 ÷ 6 **+** 3 = 81 - 4 + 3 = 80

Revise

Identify Common Factors, Common Multiples and Prime Numbers and Recognise and Use Square Numbers and Cube Numbers

Factors, multiples and prime numbers all involve multiplication and division.

Multiple	Multiples are created when two numbers are multiplied together.	$6 \times 7 = 42$ 42 is a multiple of both 6 and 7.
Factor	Factors are the whole numbers that divide exactly into a given number.	42 The factors of 42 are 1, 42, 2, 21, 3, 14, 6, 7.
Common Multiples	Common multiples are found when the multiples of two or more numbers are compared.	Find two common multiples of 4 and 6.
Common Factors	Common factors are found when the factors of two or more numbers are compared.	Find the common factors of 12 and 30.
Prime Numbers	Prime numbers are whole numbers that can only be divided by themselves and 1.	**Prime Numbers to 100:** 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97 **Remember: 1 is not a prime number.**
Prime Factors	The factors of a number that are prime.	$2 \times 2 \times 3 \times 5 = 60$ The prime factors of 60 are 2, 2, 3 and 5.
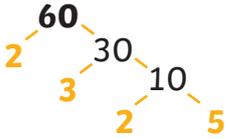
Common Multiples example table:

Multiples of 4:	4	8	**12**	16	20	**24**
Multiples of 6:	6	**12**	18	**24**		

Common Factors example table:

Multiples of 12:	**1**	12	**2**	**6**	**3**	4		
Multiples of 30:	**1**	30	**2**	15	**3**	10	5	**6**

Practise

Supercharge your powers by answering these questions.

1. Write the missing digits to make these calculations correct.

$$\begin{array}{r} 6\ \boxed{}\ 8 \\ \times\qquad\ \boxed{} \\ \hline 4\quad 3\quad 9\quad 6 \end{array}$$

$$5\ \overline{)\ 4\quad 9\quad 2\quad \boxed{}}\qquad 9\ \boxed{}\ 5$$

1 mark

2. Write the missing numbers to make these calculations correct.

$405 \div \boxed{} = 90$

$\boxed{} \times 15 = 600$

1 mark

3. Here is a number pyramid. The number in each box is the product of the two numbers below it. Write the missing numbers.

	67.5		
		9	
	2		
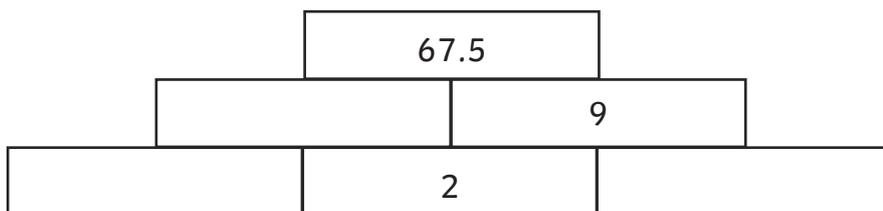
1 mark

4. Write the correct symbol, <, > or =, in each box to make the statements correct.

$12 \times 12 \quad \boxed{} \quad 14 \times 10$ $150 \div 50 \quad \boxed{} \quad 210 \div 70$

1 mark

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Practise

5. A shopkeeper is packing eggs. Each box holds 8 eggs. The farmer has 1,230 eggs. How many full boxes can the farmer pack?

Show your method

full boxes

6. A group of friends earn £161 by washing cars. They share the money equally. They get £23 each. How many friends are in the group?

Show your method

friends

7. A box contains trays of tomatoes. There are 45 tomatoes in a tray. There are 4 trays in a box. A supermarket sells 50 boxes of tomatoes. How many tomatoes does the supermarket sell?

Show your method

tomatoes

total for this page

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8. There are 34 pupils in a class. The teacher has 7 litres of orange juice. She pours 180 millilitres of orange juice for every pupil. How much orange juice is left over?

Show your method

ml

9. Write the missing numbers to make this multiplication grid correct.

×		
8	72	96
	54	

10. I buy some apples at the shop. I can buy 12 individual apples for 57p each or a bag of 12 apples for £6.50. Which is the cheaper option? Explain your reasoning.

12 individual apples for 57p	A bag of 12 apples for £6.50

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11. Three toy cars cost the same as two teddy bears. One teddy bear costs £3.75.
How much does one toy car cost?

Show your method

£

12. Write the missing numbers to make these calculations correct.

(100 − [ ]) × 3 = 165   (200 + [ ]) ÷ 4 = 60

13. Here are five number cards. Use three of the number cards to make this calculation correct.

18	10	2	5	7

([ ] + [ ]) × [ ] = 50

14. Write the correct symbol, <, > or =, in each box to make the statements correct.

(43 + 56) − 32	[ ]	(93 + 32) − 56

9 × (38 + 12)	[ ]	(9 × 12) × 4

Self-Assessment

Colour in the superhero strength-o-meter to show how you feel about each of these statements:

Statement	🔴	🟠	🟡	🟢	🟢	🟢
Multiply numbers using the formal written method of short and long multiplication.	⚪	⚪	⚪	⚪	⚪	⚪
Divide numbers using the formal written methods of short and long division.	⚪	⚪	⚪	⚪	⚪	⚪
Interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.	⚪	⚪	⚪	⚪	⚪	⚪
Identify common factors, common multiples and prime numbers and use square and cube numbers.	⚪	⚪	⚪	⚪	⚪	⚪
Use knowledge of the order of operations to carry out calculations involving the four operations.	⚪	⚪	⚪	⚪	⚪	⚪

Comments