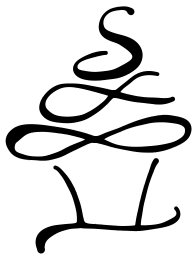
Practice Booklet

MYP 1 · Year 7 Mathematics

Unit 7.1 · Positive Integers

Name: _____

7.1.1 · 7.1.2	Divisibility · Multiples · Questions 1–15
7.1.3 · 7.1.4	Powers and roots · Sequences · Questions 16–30
7.1.5 · 7.1.6	Factors · Prime numbers · Questions 31–45
7.1.7	Product of prime factors · Questions 46–60
7.1.8	LCM and HCF · Questions 61–75
Homework	Homework page and checking record
Answers	For checking and correcting in green pen



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How to use this booklet and your homework

READ THIS FIRST

Choosing your level

Every part of the unit has four levels. Start where you feel comfortable and move between them freely. Most questions ask you to explain as well as answer, because being able to say *why* is what makes a method stick.

Learning
Small numbers, with counters or a diagram beside you.

Practising
The standard question, with your reasoning written out.

Challenging
Working backwards, and finding what is wrong with someone else's thinking.

Mastery
Explaining why a rule must be true, and testing it on new cases.

Working on your homework

Pens and setting out

- Answers in blue or black non-erasable pen, or in pencil.
- Colour and highlighters are for annotating your work and showing the steps of a method.
- Never erase a mistake. Rework it underneath so you can see what changed.

Green pen is for checking. When you finish, use the answers at the back to check your work.

- **Got it wrong?** Circle the question number, then make your correction and write your error analysis in green pen.
- **Still can't work out how to solve it?** Put a star ★ next to the question number, so we know to go over it in class.

Each sheet

- Your name goes on every sheet, because they are handed in one at a time.
- Each question is worth up to 3 marks. If a question has parts (a, b, c...), each part is marked out of 3. At the end of each level, write your score out of the total for that level.
- Questions are numbered 1, 2, 3... all the way through the booklet, so we can say exactly which ones to do.
- If you are stuck after trying, ask for help. Showing me what you tried is a good start.

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7.1.1 Divisibility · 7.1.2 Multiples

LEARNING · PRACTISING

Name:

Key vocabulary

Word	Meaning	Example
divisible	divides exactly, with no remainder	24 is divisible by 8
multiple	a number in the times table of another number	12 is a multiple of 4
common multiple	a multiple of two or more numbers	12 is a common multiple of 3 and 4
digit sum	the total you get by adding all the digits	2 340 → 2 + 3 + 4 + 0 = 9

Learning

1 Which of these are divisible by 2? How can you tell from the last digit alone? 14, 27, 40, 55

2 Which of these are divisible by 5? 30, 44, 65, 81

3 Find the digit sum of 51. Is 51 divisible by 3? Explain how you know.

4 Write the first five multiples of 3 and of 8. Does either list ever end?

Learning score _____ / 12

Practising

5 Test 2 340 for divisibility by 3, 4, 5 and 9. Give a reason for each.

6 Write the first eight multiples of 7, then ring those that are also multiples of 3.

7 Find all the common multiples of 4 and 6 below 50. Which is the lowest common multiple?

8 Which single-digit numbers divide 918 exactly? Give the test you used for each.

Practising score _____ / 12

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Name:

Challenging

9 A number is divisible by 4 and by 3. What else must divide it? Explain.

10 Find the smallest number above 100 that is divisible by both 8 and 9.

11 Find the missing digit so that 4 ★ 2 is divisible by 6. Is there more than one answer?

12 Find and describe the mistake. Sam says 2 340 is divisible by 8 because it is divisible by both 4 and 2.

Challenging score _____ / 12

Mastery

13 Explain why every number divisible by 9 is also divisible by 3.

14 Invent a test for divisibility by 12. Check it on three numbers of your own.

15 Mystery number: I have 3 digits and my first digit is 4. I am divisible by 2 and by 5. My digits add up to 9. What number am I? Show how each clue helps.

Mastery score _____ / 9

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7.1.3 Powers and roots · 7.1.4 Sequences

LEARNING · PRACTISING

Name:

Key vocabulary

Word	Meaning	Example
square number	a number multiplied by itself	$5^2 = 25$
cube number	a number multiplied by itself twice	$2^3 = 8$
power (index)	the small number that says how many times to multiply the base	in 2^5, the base is 2 and the index is 5
square root	the number that squares to give it, written √	$\sqrt{36} = 6$
sequence	a list of numbers that follow a rule	2, 5, 8, 11, …
term-to-term rule	how to get from one term to the next	add 3 each time

Learning

16 Work out a) 3^2 b) 5^2 c) 2^3

17 Write down the first six square numbers and draw the dot array for one of them.

18 Work out $\sqrt{25}$, $\sqrt{36}$ and $\sqrt[3]{8}$. What is the root undoing each time?

19 Continue the sequence 4, 7, 10, 13, ___, ___ and write the term-to-term rule in words.

Learning score _____ / 18

Practising

20 Work out a) $\sqrt{64} + 3^2$ b) $\sqrt[3]{27} \times 5^2$

21 Which of these are square numbers, and how did you decide? 36, 48, 64, 90

22 Continue 2, 6, 18, 54, ___ and state the term-to-term rule.

23 These are triangle numbers: 1, 3, 6, 10, ___. Describe the rule in words, then find the next two terms.

Practising score _____ / 15

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Name:

Challenging

24 Work out $\sqrt{(3^2 + 4^2)}$. Show which step comes first.

25 Which is larger, 2^5 or 5^2? Show your working.

26 A sequence starts at 5. The rule is "double, then subtract 3". Write the first five terms.

27 Find and describe the mistake. Mia writes $\sqrt{16} = 8$ and $2^3 = 6$.

Challenging score _____ **/ 12**

Mastery

28 Add consecutive triangle numbers: 1 + 3, then 3 + 6, then 6 + 10. Describe what you notice, then check it on the next pair.

29 A sequence has the rule "add 4". Its third term is 15. Find the first term and the seventh term.

30 Which number bigger than 1 is both a square number and a cube number? Find the smallest one and show it is both.

Mastery score _____ **/ 9**

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7.1.5 Factors · 7.1.6 Prime numbers

LEARNING · PRACTISING

Name:

Key vocabulary

Word	Meaning	Example
factor	a number that divides exactly into another number	3 is a factor of 12
factor pair	two factors that multiply to give the number	3 × 4 = 12
prime number	a number with exactly two factors: 1 and itself	2, 3, 5, 7, 11
composite number	a number with more than two factors	4, 6, 8, 9, 10
sieve of Eratosthenes	a method that crosses out multiples to leave the primes	

Learning

31 List all the factors of a) 10 b) 18 c) 25, working in pairs. How do the pairs help you know none are missing?

32 Complete the factor pairs of 20: 1 × ___, 2 × ___, 4 × ___

33 Which of these are prime? Give a reason for each one you reject. 9, 11, 15, 23, 27

34 Write down all the prime numbers below 20

Learning score _____ / 18

Practising

35 List all the factors of 36, working in pairs from the outside in.

36 Is 91 prime? Show how you decided.

37 Write the factor pairs of 48 and say how many factors it has.

38 Find all the prime numbers between 40 and 60. Which numbers could you rule out at a glance, and how?

Practising score _____ / 12

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Name:

Challenging

39 Find every number below 50 with exactly three factors. What do they have in common?

40 12 has six factors but 16 has five. Explain the difference.

41 List every number below 30 with exactly four factors.

42 Find and describe the mistake. a) A student lists the factors of 18 as 1, 2, 3, 6, 9. b) Another student says 51 is prime because it is odd.

Challenging score _____ **/ 15**

Mastery

43 Any number with an odd number of factors is a square number. Test the claim on three numbers, then explain why it happens.

44 Explain why 2 is the only even prime number and why 1 is not prime.

45 In the sieve of Eratosthenes for the numbers 1 to 50, you cross out multiples of 2, 3, 5 and 7 only. Why can you stop at 7?

Mastery score _____ **/ 9**

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7.1.7 Product of prime factors

LEARNING · PRACTISING

Name:

Key vocabulary

Word	Meaning	Example
prime factor	a factor that is a prime number	2, 3, 5, 7
factor tree	split a number into factors until every end is prime	60 → 4 × 15 → 2, 2, 3, 5
index form	write repeated primes as powers	$60 = 2^2 \times 3 \times 5$

Learning

46 Draw a factor tree for 18 and ring the primes.

47 Write 20 as a product of primes, then multiply back to check.

48 Write $2 \times 2 \times 3$ in index form.

49 Which number is $2^2 \times 3^2$?

Learning score _____ / 12

Practising

50 Write as a product of primes in index form a) 40 b) 54 c) 100

51 Draw a factor tree for 84 and write the answer in index form.

52 Write $2 \times 2 \times 2 \times 3 \times 3$ in index form, then work out the number.

53 Write 120 as a product of primes in index form. How did you know when to stop splitting?

Practising score _____ / 18

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7.1.7 Product of prime factors

Name:

Challenging

54 A number is $2^3 \times 5$. Write down four of its factors without working out the number.

55 $n = 2^2 \times 3 \times 7$. Is n divisible by a) 14 b) 18? Justify each answer from the prime factors.

56 Build a factor tree for 96 starting with 4×24, then another starting with 8×12. Compare the two answers.

57 Find and describe the mistake. Jo writes $60 = 2 \times 3 \times 10$ as a product of prime factors.

Challenging score _____ / 15

Mastery

58 A number is square exactly when every index in its prime factorisation is even. Test this on 144 and on 200, then explain it.

59 What is the smallest whole number you can multiply 90 by to make a square number? Show your reasoning.

60 How many factors does $2^3 \times 3^2$ have? Explain how you can find the answer without listing them.

Mastery score _____ / 9

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7.1.8 LCM and HCF

Name:

Key vocabulary

Word	Meaning	Example
HCF	highest common factor: the biggest number that divides both	HCF(12, 18) = 6
LCM	lowest common multiple: the smallest number both divide into	LCM(4, 6) = 12
Venn diagram	two overlapping circles: the overlap holds what is shared	prime factors of 20 and 30

Learning

61 List the factors of 12 and of 16, then write the HCF. Why is it a factor of both?

62 List the first six multiples of 3 and of 4, then write the LCM. Why do we want the lowest shared multiple?

63 Find a) HCF(8, 12) b) LCM(8, 12)

64 Two bells ring every 4 minutes and every 6 minutes, together now. After how many minutes do they next ring together?

Learning score _____ / 15

Practising

65 Find a) the HCF and b) the LCM of 18 and 30 by listing.

66 Find HCF(24, 36) and LCM(24, 36), and check that their product is 24 × 36.

67 $20 = 2^2 \times 5$ and $30 = 2 \times 3 \times 5$. Draw the Venn diagram of their prime factors, then read off the HCF and the LCM.

68 A teacher has 24 pencils and 36 erasers and makes identical packs using everything. What is the largest number of packs, and what is in each one?

Practising score _____ / 15

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7.1.8 LCM and HCF

Name:

Challenging

69 $84 = 2^2 \times 3 \times 7$ and $126 = 2 \times 3^2 \times 7$. Find the HCF and the LCM.

70 Two numbers have an HCF of 6 and an LCM of 36. Find two possible pairs.

71 Buses leave every 15 minutes and every 25 minutes, both at 08:00. When do they next leave together?

72 Find and describe the mistake. Lena says the HCF of 12 and 18 is 36 and the LCM is 6.

Challenging score _____ / 12

Mastery

73 Two numbers have a product of 480 and an HCF of 4. Find their LCM, then find every possible pair.

74 Three lights flash every 8, 12 and 18 seconds, together at midnight. When do all three next flash together? Explain your method in words a Year 6 student would follow.

75 For each problem say whether you need the HCF or the LCM, and why, then solve it. a) Cut ribbons of 24 cm and 36 cm into equal pieces, with none left over, as long as possible. b) Two lights flash every 8 seconds and every 12 seconds. When do they flash together again?

Mastery score _____ / 12

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Homework and checking record

HAND THIS PAGE IN WITH YOUR SHEETS

Name:

Your teacher will tell you which sheet and questions to do. Choose your level, set out your work in pen or pencil, then check it with the answers at the back using a **green pen**: circle wrong question numbers, and star ★ any you still cannot solve.

Sheet	Questions	Which ones I did	Checked in green ✔	Teacher
7.1.1 Divisibility · 7.1.2 Multiples	Q1–15			
7.1.3 Powers and roots · 7.1.4 Sequences	Q16–30			
7.1.5 Factors · 7.1.6 Prime numbers	Q31–45			
7.1.7 Product of prime factors	Q46–60			
7.1.8 LCM and HCF	Q61–75			

Error analysis

Circle the number of any question you got wrong. Star ★ it if you still cannot solve it after correcting. Then write the questions you need to rework, and what you will do differently:

One thing I understand better now

Score: Parent / guardian signature:

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Answers

CHECK IN GREEN PEN

7.1.1 Divisibility · 7.1.2 Multiples

Learning	**1**	14 and 40. A number is divisible by 2 when its last digit is 0, 2, 4, 6 or 8.
	2	30 and 65, because a number is divisible by 5 when its last digit is 0 or 5.
	3	Digit sum 5 + 1 = 6. 6 is divisible by 3, so 51 is divisible by 3 (51 = 3 × 17).
	4	3, 6, 9, 12, 15 and 8, 16, 24, 32, 40. Neither list ends, because you can always add another 3 (or 8).
Practising	**5**	Digit sum 2 + 3 + 4 + 0 = 9, so it is divisible by 3 and by 9. The last two digits are 40 and 40 ÷ 4 = 10, so it is divisible by 4. It ends in 0, so it is divisible by 5. It passes all four tests.
	6	7, 14, 21, 28, 35, 42, 49, 56. Ring 21 and 42, because they are also multiples of 3.
	7	Multiples of 4: 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48. Multiples of 6: 6, 12, 18, 24, 30, 36, 42, 48. Common multiples: 12, 24, 36, 48. The lowest is 12.
	8	1, 2, 3, 6 and 9. It ends in 8, so 2 works. The digit sum is 9 + 1 + 8 = 18, so 3 and 9 work. It is even and divisible by 3, so 6 works. 4 fails (18 ÷ 4 = 4.5), 5 fails (it does not end in 0 or 5), 7 fails (918 ÷ 7 = 131.14…) and 8 fails (918 ÷ 8 = 114.75).
Challenging	**9**	12, and also 2 and 6. 12 = 4 × 3 and 4 and 3 share no factor, so the number is divisible by 12. Anything that divides 12 (2, 6) divides it too.
	10	The lowest common multiple of 8 and 9 is 72. Multiples of 72: 72, 144. So 144 is the smallest above 100 (144 ÷ 8 = 18, 144 ÷ 9 = 16).
	11	Divisible by 6 means even and digit sum divisible by 3. It is even already. 4 + ★ + 2 = 6 + ★ must be a multiple of 3, so ★ = 0, 3, 6 or 9. The numbers are 402, 432, 462 and 492.
	12	Being divisible by 4 (and so by 2) does not make a number divisible by 8. For 8, test the last three digits: 340 ÷ 8 = 42.5, so 2 340 is not divisible by 8.
Mastery	**13**	9 = 3 × 3, so a number that is divisible by 9 is made of whole groups of 9, and each group of 9 is 3 groups of 3. Using digit sums: if the digit sum is a multiple of 9, it is also a multiple of 3.
	14	A number is divisible by 12 if it passes the test for 3 and the test for 4 (3 and 4 share no factor). For example 132: digit sum 6, last two digits 32 ÷ 4 = 8, so 132 ÷ 12 = 11. 144 and 156 also pass. 18 passes the test for 3 but not 4, so it is not divisible by 12.
	15	Divisible by 2 and 5 means it ends in 0, so it is 4 _ 0. The digits add to 9, so 4 + _ + 0 = 9 and the middle digit is 5. The number is 450.

7.1.3 Powers and roots · 7.1.4 Sequences

Learning	**16**	a) 3 × 3 = 9 b) 5 × 5 = 25 c) 2 × 2 × 2 = 8
	17	1, 4, 9, 16, 25, 36. For example $4^2 = 16$ is a square of dots with 4 rows of 4.
	18	5, 6 and 2. The square root undoes squaring ($5^2 = 25$) and the cube root undoes cubing ($2^3 = 8$).
	19	16, 19. The rule is add 3 each time.
Practising	**20**	a) Powers and roots first: 8 + 9 = 17 b) 3 × 25 = 75
	21	36 (6 × 6) and 64 (8 × 8). 48 is between 36 and 49, and 90 is between 81 and 100, so neither is a square number.
	22	162. The rule is multiply by 3 each time (54 × 3 = 162).
	23	The gap grows by one each time: add 2, add 3, add 4. Next terms: 10 + 5 = 15, then 15 + 6 = 21.
Challenging	**24**	The power inside comes first: $3^2 + 4^2 = 9 + 16 = 25$. Then the root: $\sqrt{25} = 5$.
	25	$2^5 = 2 \times 2 \times 2 \times 2 \times 2 = 32$ and $5^2 = 5 \times 5 = 25$. So 2^5 is larger.
	26	5, then 2 × 5 − 3 = 7, then 2 × 7 − 3 = 11, then 2 × 11 − 3 = 19, then 2 × 19 − 3 = 35. The terms are 5, 7, 11, 19, 35.
	27	$\sqrt{16} = 4$, because 4 × 4 = 16; she halved 16 instead of finding the square root. $2^3 = 2 \times 2 \times 2 = 8$; she worked out 2 × 3 instead of using 2 three times.
Mastery	**28**	The sums are 4, 9 and 16, which are square numbers. Next pair: $10 + 15 = 25 = 5^2$, so it still works.
	29	Work backwards: the second term is 11 and the first term is 7. Going forwards from the third term: 19, 23, 27, 31. The seventh term is 31.
	30	64, because $64 = 8^2$ and $64 = 4^3$. (1 is both too, but it is not bigger than 1.)

7.1.5 Factors · 7.1.6 Prime numbers

Learning	**31**	a) 1 × 10, 2 × 5: factors 1, 2, 5, 10 b) 1 × 18, 2 × 9, 3 × 6: factors 1, 2, 3, 6, 9, 18 c) 1 × 25, 5 × 5: factors 1, 5, 25. Working in pairs and stopping when the numbers meet means every factor has been found.
	32	1 × 20, 2 × 10, 4 × 5
	33	11 and 23 are prime. 9 = 3 × 3, 15 = 3 × 5 and 27 = 3 × 9 each have a factor other than 1 and themselves.
	34	2, 3, 5, 7, 11, 13, 17, 19
Practising	**35**	1 × 36, 2 × 18, 3 × 12, 4 × 9, 6 × 6. The factors are 1, 2, 3, 4, 6, 9, 12, 18, 36.
	36	Not prime. It is not even, the digit sum is 10 (not a multiple of 3) and it does not end in 0 or 5, but 7 × 13 = 91, so 7 is a factor.
	37	1 × 48, 2 × 24, 3 × 16, 4 × 12, 6 × 8. That is 10 factors. Ten is even because 48 is not a square number.
	38	41, 43, 47, 53 and 59. Even numbers and numbers ending in 5 are ruled out at once. 51 and 57 have a digit sum divisible by 3. 49 = 7 × 7.
Challenging	**39**	4, 9, 25 and 49 (factors 1, p and p^2, for example 1, 2, 4). Each is a prime number multiplied by itself.
	40	12 = 1 × 12, 2 × 6, 3 × 4 gives six factors. 16 = 1 × 16, 2 × 8, 4 × 4 repeats the 4, so only five. Square numbers have an odd number of factors.
	41	6, 8, 10, 14, 15, 21, 22, 26, 27. For example 27 has factors 1, 3, 9, 27.
	42	a) 18 is missing: every number is a factor of itself. The factors are 1, 2, 3, 6, 9, 18. b) Being odd does not make a number prime. 51 = 3 × 17 (digit sum 6), so it is not prime.
Mastery	**43**	For example 9 has 3 factors, 16 has 5 and 25 has 3, and all are squares. Factors come in pairs, so the count is even unless a factor pairs with itself, which only happens when the number is a square.
	44	Every even number above 2 has 2 as a factor as well as 1 and itself, so it has at least three factors. 1 has only one factor, but a prime needs exactly two.
	45	The next prime is 11 and 11 × 11 = 121 is bigger than 50. Any composite number up to 50 has a prime factor of at most 7 (because 7 × 7 = 49), so it has already been crossed out.

7.1.7 Product of prime factors

Learning	**46**	$18 = 2 \times 9$ and $9 = 3 \times 3$, so $18 = 2 \times 3 \times 3$. Ring 2, 3 and 3.
	47	$20 = 2 \times 2 \times 5$. Check: $2 \times 2 = 4$, $4 \times 5 = 20$.
	48	2×2 is 2^2, so $2 \times 2 \times 3 = 2^2 \times 3$.
	49	$2^2 = 4$ and $3^2 = 9$, so $4 \times 9 = 36$.
Practising	**50**	a) $40 = 2 \times 2 \times 2 \times 5 = 2^3 \times 5$ b) $54 = 2 \times 3 \times 3 \times 3 = 2 \times 3^3$ c) $100 = 2 \times 2 \times 5 \times 5 = 2^2 \times 5^2$
	51	$84 = 2 \times 42$, $42 = 2 \times 21$, $21 = 3 \times 7$. So $84 = 2 \times 2 \times 3 \times 7 = 2^2 \times 3 \times 7$.
	52	$2^3 \times 3^2 = 8 \times 9 = 72$
	53	$120 = 2 \times 2 \times 2 \times 3 \times 5 = 2^3 \times 3 \times 5$. You stop when every branch ends in a prime number, because a prime cannot be split any further.
Challenging	**54**	Any four of 1, 2, 4, 5, 8, 10, 20, 40 (each is made from some of the primes 2, 2, 2 and 5).
	55	a) Yes: $14 = 2 \times 7$ and both primes are in n. b) No: $18 = 2 \times 3 \times 3$ needs two 3s but n has only one 3. (n = 84 and $84 \div 18 = 4.67\ldots$)
	56	Both trees give $96 = 2 \times 2 \times 2 \times 2 \times 2 \times 3 = 2^5 \times 3$. The prime factors are always the same, however you build the tree.
	57	10 is not prime ($10 = 2 \times 5$), so the factorisation is not finished. $60 = 2 \times 2 \times 3 \times 5 = 2^2 \times 3 \times 5$.
Mastery	**58**	$144 = 2^4 \times 3^2$, all even, and $144 = 12^2$. $200 = 2^3 \times 5^2$ has an odd index and is not square. A square splits into two identical halves, so each prime appears an even number of times.
	59	$90 = 2 \times 3^2 \times 5$. The 2 and the 5 have odd indices, so multiply by $2 \times 5 = 10$. $90 \times 10 = 900 = 30^2$.
	60	Twelve. A factor uses 0, 1, 2 or 3 twos (4 choices) and 0, 1 or 2 threes (3 choices), so $(3 + 1) \times (2 + 1) = 12$. Check: $2^3 \times 3^2 = 72$ has factors 1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36, 72.

7.1.8 LCM and HCF

Learning	**61**	12: 1, 2, 3, 4, 6, 12. 16: 1, 2, 4, 8, 16. The common factors are 1, 2 and 4, so HCF = 4. It divides both numbers exactly, so it is a factor of each.
	62	3, 6, 9, 12, 15, 18 and 4, 8, 12, 16, 20, 24. The first shared multiple is 12, so LCM = 12. There is no highest common multiple, because multiples never end.
	63	Factors of 8: 1, 2, 4, 8. Factors of 12: 1, 2, 3, 4, 6, 12. a) HCF = 4. Multiples of 8: 8, 16, 24. Multiples of 12: 12, 24. b) LCM = 24.
	64	This needs the lowest common multiple: LCM(4, 6) = 12. They next ring together after 12 minutes.
Practising	**65**	Factors of 18: 1, 2, 3, 6, 9, 18. Factors of 30: 1, 2, 3, 5, 6, 10, 15, 30. a) HCF = 6. Multiples of 18: 18, 36, 54, 72, 90. Multiples of 30: 30, 60, 90. b) LCM = 90.
	66	HCF = 12 and LCM = 72. Check: $12 \times 72 = 864$ and $24 \times 36 = 864$, so the product matches.
	67	Overlap: 2 and 5, so HCF = $2 \times 5 = 10$. Only in 20: 2. Only in 30: 3. Everything together: $2 \times 2 \times 3 \times 5$, so LCM = 60.
	68	Sharing into identical packs needs the HCF: HCF(24, 36) = 12. There are 12 packs, each with $24 \div 12 = 2$ pencils and $36 \div 12 = 3$ erasers.
Challenging	**69**	HCF: take the shared primes, lowest powers: $2 \times 3 \times 7 = 42$. LCM: take every prime, highest powers: $2^2 \times 3^2 \times 7 = 252$.
	70	6 and 36, or 12 and 18. Check 12 and 18: HCF = 6, LCM = 36.
	71	LCM(15, 25) = 75 minutes, which is 1 hour 15 minutes, so 09:15.
	72	She swapped them. The HCF is the largest number that divides both, which is 6. The LCM is the smallest number both divide into, which is 36.
Mastery	**73**	HCF × LCM = the product, so LCM = $480 \div 4 = 120$. Pairs: 4 and 120, 8 and 60, 12 and 40, 20 and 24.
	74	72 seconds. $8 = 2^3$, $12 = 2^2 \times 3$, $18 = 2 \times 3^2$, so take the highest power of each prime: $2^3 \times 3^2 = 72$.
	75	a) HCF, because we are sharing into the biggest equal pieces: 12 cm. b) LCM, because we are waiting for both to line up: 24 seconds.