

# Oxford Revise | Edexcel GCSE Maths Foundation | Answers

## Chapter 2 Indices, Powers and Roots, Factors, Multiples, Primes

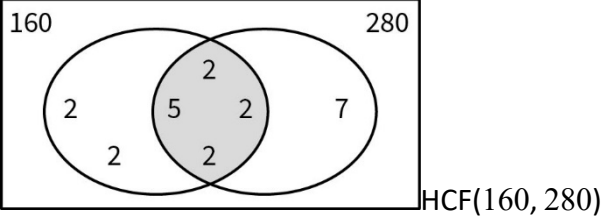
Question	Answer	Extra information	Marks
2.1 (a)	16		1
2.1 (b)	8		1
2.1 (c)	7	Do not accept $-7$	1
2.1 (d)	3	Do not accept $-3$	1
2.2 (a)	$2 \times \sqrt{25} + 36 = 2 \times 5 + 36$ $= 10 + 36$ $= 46$	$\sqrt{25}$ and 36	1
		Multiplying first	1
		Correct answer	1
2.2 (b)	$81 - 6 \times 2 + 50 \div 25 = 81 - 12 + 2$ $= 71$	81, 2 and 25	1
		Multiplying and dividing first	1
		Correct answer	1
2.3	Side length = $\sqrt{121} = 11$	Correctly solving for the side length	1
	Perimeter = $4 \times 11 = 44$ cm	Correct answer	1
2.4 (a)	0.845 537 207		1
2.4 (b)	0.846		1

Question	Answer	Extra information	Marks
2.5	$2^3 \times 5^2 = 2 \times 2 \times 2 \times 5 \times 5$ $= 8 \times 25$ $= 200$ This is not the same as $10^5 = 10 \times 10 \times 10 \times 10 \times 10$		1
2.6 (a)	$7^7$	Add the indices	1
2.6 (b)	$9^6$	Subtract the indices	1
2.6 (c)	$2^2$	Add the indices	1
2.6 (d)	$7^{-2} \div 7^{-6} = 7^{-2-(-6)}$ $= 7^{-2+6}$ $= 7^4$	Subtract the indices	1
2.6 (e)	$3^{16}$	Multiply the indices	1
2.7 (a)	$8^{-10}$	Multiply the indices	1
2.7 (b)	$9^{-3}$	Add the indices in the denominator	1
		Correct answer	1
2.7 (c)	$(2^{11})^{-1} = 2^{-11}$	Add the indices in the brackets, then multiply	1
		Correct answer	1
2.8	$10^5 \text{ cm}^2$	Multiplying $10^3$ and $10^2$	1
		Correct answer	1

Question	Answer	Extra information	Marks
2.9 (a)	1		1
2.9 (b)	$\frac{1}{8}$	Also accept 0.125	1
2.9 (c)	$\frac{8}{125}$	Also accept 0.064	1
2.9 (d)	$\left(\frac{1}{4}\right)^{-2} = 4^2$ $= 16$	Reciprocal rule used	1
		Correct answer	1
2.10 (a)	Either 3 or 6		1
2.10 (b)	Either 18 or 36		1
2.10 (c)	Either 24 or 36		1
2.10 (d)	8		1
2.10 (e)	10 and 30		1
2.10 (f)	Any two from 3, 6, 10 and 30		1
2.11	36	Multiples of 9 and 12 attempted	1
		Correct answer	1
2.12	6	Factors of 18 and 12 attempted	1
		Correct answer	1

Question	Answer	Extra information	Marks
2.13	All three alarms beep together at 9:30 am	Multiples of 15 considered Correct answer	1 1
2.14 (a)	<p style="text-align: center;"> <math>540 = 2^2 \times 3^3 \times 5</math> </p>	Method Correct answer	1 1
2.14 (b)	3 and 5 are both factors of 540, so $3 \times 5 (= 15)$ will also be a factor of 540		1

Question	Answer	Extra information	Marks
2.15	<p>The prime factors of each number are:</p> $4 = 2 \times 2$ $5 = 5$ $6 = 2 \times 3$ The prime factor decomposition of any number divisible by 4, 5 and 6 must have at least two 2s, one 5 and one 3: $2 \times 2 \times 3 \times 5$ (The smallest number is thus 60)	<p>Prime factors of 4 and 6</p> <p>Correct answer</p>	<p>1</p> <p>1</p>
2.16 (a)	$160 = 2^5 \times 5$	<p>Method</p> <p>Correct answer</p>	<p>1</p> <p>1</p>

Question	Answer	Extra information	Marks
2.16 (b)	$280 = 2^3 \times 5 \times 7$ $160 = 2^5 \times 5$ Here is a Venn diagram showing the prime factors:  $= 2^3 \times 5 = 40$	Multiplying common factors Correct answer	1 1
2.16 (c)	From the Venn diagram, $\text{LCM}(160, 280)$ $= 2 \times 2 \times 2 \times 2 \times 2 \times 5 \times 7 = 1120$	Multiplying appropriate factors Correct answer	1 1
2.17 (a)	-12		1
2.17 (b)	12		1
2.17 (c)	32		1
2.17 (d)	-2		1

Question	Answer	Extra information	Marks
2.18 (a)	13 500		1
2.18 (b)	450		1
2.18 (c)	135 000		1
2.18 (d)	30		1