Oxford Revise | AQA 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)	$2\times\sqrt{25}+36=2\times5+36$ $=10+36$ $=46$	$\sqrt{25}$ and 36 Multiplying first Correct answer	1 1 1
2.2 (b)	$81-6\times2+50\div25=81-12+2$ $=71$	81, 2 and 25 Multiplying and dividing first Correct answer	1 1 1
2.3	Side length = $\sqrt{121}=11$ Perimeter = $4\times11=44$ cm	Correctly solving for the side length Correct answer	1 1
2.4 (a)	$0.845\,537\,207$		1
2.4 (b)	0.846		1

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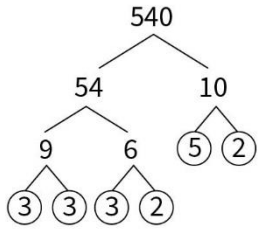
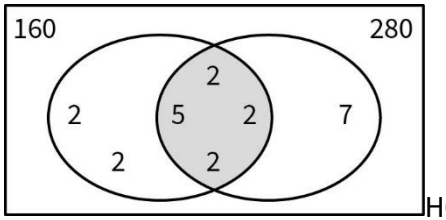
Question	Answer	Extra information	Marks
2.5	$2^3 \times 5^2 = 2 \times 2 \times 2 \times 5 \times 5$ $= 8 \times 25$ $= 200$ This is not the same as $10^5 = 10 \times 10 \times 10 \times 10 \times 10$		1
2.6 (a)	7^7	Add the indices	1
2.6 (b)	9^6	Subtract the indices	1
2.6 (c)	2^2	Add the indices	1
2.6 (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 Correct answer	1 1
2.7 (c)	$(2^{11})^{-1} = 2^{-11}$	Add the indices in the brackets, then multiply Correct answer	1 1
2.8	$10^5\ \text{cm}^2$	Multiplying 10^3 and 10^2 Correct answer	1 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 Correct answer	1 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 Correct answer	1 1
2.12	6	Factors of 18 and 12 attempted Correct answer	1 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)	 $540 = 2^2 \times 3^3 \times 5$	Method Correct answer	1 1
2.14 (b)	3 and 5 are both factors of 540, so 3×5 $(= 15)$ will also be a factor of 540		1
2.15	The prime factors of each number are: $4 = 2 \times 2$ $5 = 5$ $6 = 2 \times 3$ 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)	Prime factors of 4 and 6 Correct answer	1 1

Question	Answer	Extra information	Marks
2.16 (a)	$160 = 2^5 \times 5$	Method Correct answer	1 1
2.16 (b)	$280 = 2^3 \times 5 \times 7$ $160 = 2^5 \times 5$ Here is a Venn diagram showing the prime factors:  HCF(160, 280) $= 2^3 \times 5 = 40$	Multiplying common factors Correct answer	1 1
2.16 (c)	From the Venn diagram, 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