Oxford Revise | AQA GCSE Maths Foundation | Answers

Chapter 10 Solving quadratic equations by factorising

Question	Answer	Extra information	Marks
10.1 (a)	$x^2+3x+6x+18=x^2+9x+18$	Correct expansion, without simplifying Fully correct and simplified expansion	1 1
10.1 (b)	$b^2-3b+4b-12=b^2+b-12$	Correct expansion, without simplifying Fully correct and simplified expansion	1 1
10.1 (c)	$(t-5)(t-5)=t^2-5t-5t+25$ $=t^2-10t+25$	Correct expansion, without simplifying Fully correct and simplified expansion	1 1
10.2 (a)	$xy+7x+y+7$	Correct expansion	1
10.2 (b)	$(x-y)(x-y)=x^2-xy-xy+y^2$ $=x^2-2xy+y^2$	Correct expansion, without simplifying Fully correct and simplified expansion	1 1
10.2 (c)	$6p+27-4p^2-18p=-4p^2-12p+27$	Correct expansion, without simplifying Fully correct and simplified expansion	1 1
10.3	$\text{Area}=\frac{1}{2}\times(2x+2)\times(2x-1)$ $=(x+1)(2x-1)$ $=2x^2+x-1$	Writing one-half times base times height and putting the expressions for the base and height into the formula Expanding brackets correctly Correct answer	1 1 1

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Question	Answer	Extra information	Marks
10.4 (a)	$(x+2)(x+3)$	Two sets of brackets, including two numbers that multiply to give the constant term Correct answer	1 1
10.4 (b)	$(y-2)(y-1)$	Two sets of brackets, including two numbers that multiply to give the constant term Correct answer	1 1
10.4 (c)	$(p-12)(p+3)$	Two sets of brackets, including two numbers that multiply to give the constant term Correct answer	1 1
10.5	The quadratic expression factorises in only one way: $(x+9)(x-3)$ The sides are $(x+9)$ and $(x-3)$	Factorising correctly Correct answer	1 1
10.6 (a)	$y(y+16)$		1
10.6 (b)	$(x-4)(x+4)$		1
10.6 (c)	$(a+8)(a+8)=(a+8)^2$	Brackets with two numbers to give 64 Correct answer	1 1
10.7	$x^2=49$ $x=\pm 7$	Both answers needed for full marks. Positive answer alone gets 1 mark	1 1
10.8 (a)	$(x+4)(x+5)=0$ $x=-4,-5$	Factorising Both correct answers	1 1

Question	Answer	Extra information	Marks
10.8 (b)	$(x-8)(x+1)=0$ $x=8,-1$	Factorising Both correct answers	1 1
10.8 (c)	$x(x+5)=0$ $x=0,-5$	Factorising Both correct answers	1 1
10.8 (d)	$(x+1)(x-1)=0$ $x=-1,1$	Factorising Both correct answers	1 1
10.8 (e)	$2x(x+3)=0$ $x=0,-3$	Factorising Both correct answers	1 1
10.9 (a)	Area is 12, which is equal to the length times height: $(x-4)(x-5)=12$ $x^2-9x+20-12=0$ $x^2-9x+8=0$	$(x-4)(x-5)=12$ Expanding and trying to rearrange to make equal to 0 Correct working to reach the final answer	1 1 1
10.9 (b)	$(x-8)(x-1)=0$ $x=8,1$ When $x=1$, both $x-4$ and $x-5$ result in negative side lengths, so discard this. When $x=8$, the side lengths are 4 cm and 3 cm. The shortest side is 3 cm.	Factorising Solutions 8 and 1 Correct answer	1 1 1

Question	Answer	Extra information	Marks
10.10	$(2x+5)(2x+5)=30$ $4x^2+20x+25=30$ $4x^2+20x=5$	Construct the correct equation Expand brackets Correct working	1 1 1
10.11	If $(x+4)=0$, then $x=-4$, not $x=4$		1
10.12 (a)	$60\times1.05=63$	Correct multiplier Correct answer	1 1
10.12 (b)	$0.5\times0.2=0.1$	Correct multiplier Correct answer	1 1
10.13 (a)	$0.865\leq x<0.875$	0.865 or 0.875 at the correct end of an error interval Fully correct	1 1
10.13 (b)	$7\leq y<8$	7 or 8 at the correct end of an error interval Fully correct	1 1