DRAWING QUADRATIC GRAPHS

Pearson Edexcel - Tuesday 21 May 2019 - Paper 1 (Non-Calculator) Foundation Tier

1.

29	(a)	1, −4	B1	cao	Brackets are given on the answer line, ignore any extra brackets seen
	(b)	−1 and 3	B2	for both correct answers	
			(B1	for one correct solution or $(x + 1)(x − 3)$ or $(−1, 3)$)	

Pearson Edexcel - Monday 12 November 2018 - Paper 3 (Calculator) Foundation Tier

2.

22	(a)	2, −4, 2, 8	B2	all 4 values correct	
			(B1	for 2 or 3 correct values)	
	(b)	Graph	M1	(dep B1) for at least 5 points plotted correctly ft from part a	
			A1	for a fully correct curve drawn	Accept freehand curves drawn that are not line segments; there must be some attempt to draw the minimum point below $y = −4$.
	(c)	−2.6 or 1.6	B1	for 1 correct value, ft a non linear graph	Award for −2.6 or 1.6 or both values but do not award the mark if a correct value is given with an incorrect value. Accept 1.56 or −2.56 Note for ft to be applied the graph may be joined by line segments.

Pearson Edexcel - Thursday 7 June 2018 - Paper 2 (Calculator) Foundation Tier

3.

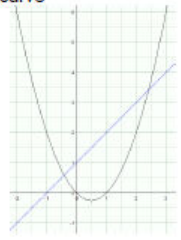| 24	(a)	0, −4, −6, −4, 0	B2	fully correct figures	
			(B1	At least 2 correct figures)	
	(b)	Graph	M1	(dep B1) for at least 5 points correctly plotted ft from (a)	
			A1	fully correct graph	Must be a curve
	(c)	2.6 and −1.6	M1	for $y = −2$ drawn **or** intersections with $y = −2$ or $y = x^2 − x − 4$ drawn **or** 1 correct value	If answers stated as coordinates, award M1 for both coordinates and M0 for one coordinate
			A1	ft a quadratic graph **or** for answers in the range 2.5 to 2.7 **and** −1.5 to −1.7	

Pearson Edexcel - Thursday 2 November 2017 - Paper 1 (Non-Calculator) Foundation Tier

4.

29		Comment	B1	for correct mathematical comment eg line segments not a curve **or** should draw freehand **or** should not use a ruler, **or** should be a curve NB Do not accept statements about scale or plotting accuracy.

OCR November 09 November 2020- Morning (Calculator) Foundation Tier

5.

22	a	2 0	2	B1 for each	
	b	Correct curve	3	B2FT for all points correctly plotted or B1FT for 4 or 5 points correctly plotted	FT their values from the table in (a) for points but accept only the correct curve. Accuracy ± half small square Correct curve must have at least one square of daylight below x-axis at minimum point and not intended straight
	c	-[0].4 and 2.4	2	Correct answer or FT *their* graph for both B1 for each	-0.45 to -0.35 and 2.35 to 2.45 FT from *their* line with half square accuracy (may be straight)

OCR Tuesday 13 June 2017 – Morning (Calculator) Foundation Tier

6.

21	(a)	8	1		
	(b)	Correct curve	2	**B1FT** for 4, 5 or 6 points plotted correctly	½ square tolerance **B1** max if line ruled (between any points)
	(c)	-0.9 to -0.6 2.6 to 2.9	2	**B1 for each** If 0 scored **SC1** for (⁻0.9 to ⁻0.6, 2) and (2.6 to 2.9, 2) If 0 scored SC1 for answer as an inequality Eg −0.8 ≤ x ≤ 2.7	If more than two answers mark the worst two Condone for **2** marks when both answers in body but only one given on answer line

AQA Thursday 4 June 2020 – Morning (Calculator) Foundation Tier

7.

Q	Answer	Mark	Comments
22(a)	2 and 5 with no other roots	B2	either order B1 at least one correct root with up to one incorrect root SC1 (2, 0) or (5, 0) or (2, 5) or (5, 2)

Additional Guidance	
$x = 2$ and $x = 5$	B2
2, 5 or 5, 2	B2
(2, 0) and (5, 0) and 2 and 5	SC1
(2, 0) and (5, 0) and −2 and −5	B0
2, 0 and 5, 0 (both pairs imply coordinates)	SC1
2, 0 or 5, 0 (one pair implies roots)	B1
(0, 2) and (0, 5)	B0
0, 2 and 0, 5 (both pairs imply coordinates)	B0
0, 2 or 0, 5 (one pair implies roots)	B1
Both answers embedded $2^2 - 7 \times 2 + 10 = 0$ and $5^2 - 7 \times 5 + 10 = 0$	B1
$(x - 2)(x - 5)$	B0

Q	Answer	Mark	Comments
22(b)	3.5	B1	oe

Additional Guidance	
$x = 3.5$	B1
$3.5x$	B0
Ignore any y-coordinate even with brackets omitted eg (3.5, −2.25) or 3.5, −2 or $x = 3.5$ $y = -2.25$ or $x = 3.5$ $y = 2$	B1
(−2.25, 3.5)	B0

AQA Tuesday 6 November 2018 – Morning (Non-Calculator) Foundation Tier

8.

22(a)	x	−2	−1	0	1	2	B1	
	y	4	1	0	1	4		

	Plots their points correctly or restarts with 4 or 5 correct points plotted	M1	$\pm\frac{1}{2}$ square tolerance allow one error
	Correct graph	A1	smooth quadratic curve through points
	Additional Guidance		
22(b)	Allow $\pm\frac{1}{2}$ square tolerance for curve passing through points		
	If their points do not form a quadratic curve, it is maximum M1		
	The 'base' of the quadratic curve should be a smooth fairly flat curve, not a pointed shape		
	Ignore additional points beyond $x = 2$ and $x = -2$		
	Ignore extended graph beyond $x = 2$ and $x = -2$		

	Draws a horizontal line from 2.6 on the y-axis to their graph	M1	implied by correct vertical line down to the x-axis from correct point or at least one correct value seen for their graph
	Correct readings from their graph	A1ft	must see both values
	Additional Guidance		
22(c)	Positive value only or negative value only given		M1A0
	Tolerance on readings of $\pm\frac{1}{2}$ square		
	It is sufficient, for M1, for the horizontal line to meet the graph once		
	No graph and answer of 1.6		M0A0