Paper: 1MA1/1H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
18 **Q1**	Graph drawn	C2 (C1	for graph translated by −2 in the *y* direction for a graph translated in the *y* direction **OR** for a correct graph through four of the five key points)	Key points: (–180, –2), (–90, –3), (0, –2), (90, –1), (180, –2)

Paper: 1MA1/1H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
14 **Q2**	$\frac{1}{2}$	M1 A1	for $\frac{1}{\sqrt{3}} \times \frac{\sqrt{3}}{2}$ **or** $\frac{\sqrt{3}}{3} \times \frac{\sqrt{3}}{2}$ **or** $(\frac{1}{2} \div \frac{\sqrt{3}}{2}) \times \frac{\sqrt{3}}{2}$ **OR** $\tan 30 = \frac{1}{\sqrt{3}}$ oe **or** $\sin 60 = \frac{\sqrt{3}}{2}$ for $\frac{1}{2}$ or 0.5	

Paper: 1MA1/2H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
18 (a)	37, 143, 397, 503	M1	for any two correct angles within the ranges below **or** for a correct method to find a solution beyond 360, eg. "angle read from 0 to 360" + 360	Accept given as coordinates for M1 only
Q3		A1	for all 4 angles in the range, 35 to 40, 140 to 145, 395 to 400 and 500 to 505	
(b)	$y = -\sin x^{o}$	B1	for any acceptable equations, eg. $y = -\sin x^{o}$ or $y = \sin(-x^{o})$ or $-y = \sin x^{o}$ or $y = \cos(x^{o} + 360n + 90)$ or for any positive integer n, $y = \sin(x^{o} - (2n - 1)180)$ or $y = \cos(x^{o} + 360n)$	Quoted are just the more likely solutions but check all attempts Condone missing degrees sign
(c)	graph	C1	for correct graph shown translated 2 in the positive x-direction	

Paper: 1MA1/1H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
8 (a)	1	B1	cao	
(b)	8	M1	starts process, eg $\cos(60) = \frac{4}{x}$ or $0.5 = \frac{4}{x}$ oe or $\sin 30 = \frac{4}{x}$ or $\frac{\sin 30}{4} = \frac{\sin 90}{x}$ oe	All three elements of cos, 4, x must be present in an equation. eg cos = 4/x is acceptable but cos(4/x) is insufficient
Q4		A1	cao	

Paper: 1MA1/3H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
11 **Q5**	Graph drawn	C2 (C1	for fully correct sketch between 0° and 360° for a graph with clear asymptotes at 90° and 270° only **or** the correct graph translated along the *x*-axis must have a period of 180)	

Paper: 1MA1/1H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
21 **Q6**	(180, –1)	B1 B1	for $180^{(o)}$ for –1 SC B1 if B0 scored for answer of (–1, 180)	

Paper: 1MA1/2H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
21 (a)	Sketch	B1	for an appropriate sketch, ie reflection in y axis	Must go through $(-2, -4)$ $(0, 0)$ $(1, 1)$ $(3, 0)$ $(5, 4)$
(b)	$\tan(x + 270)° - 5$	M1	for describing one part of the translation, eg $360 - 90$ $(= 270)$ or $\tan(x + 270)$ **or** $(y =) \tan(kx + a) - 5$ where k and a are numbers and $k \neq 0$	
Q7		A1	cao	Condone missing degree symbol

Paper: 1MA1/1H				
Question	**Working**	**Answer**	**Mark**	**Notes**
20 **Q8**		$1+\sqrt{2}$	B1 P1 P1 A1	for a value for a known trigonometric ratio stated for process to form 2 equations in a and b **or** one correct value stated for complete process to solve to reach $a = 2$ and $b = 1$ for $1+\sqrt{2}$ oe