8	**(a)**		$y = x^3 - 8$ $x^3 = y + 8$ $\sqrt[3]{(x+8)}$ oe isw	**M1** **A1** **[2]**	**1.1a** **2.2a**	Attempt to re-arrange Ignore labelling of this expression eg fh(x) = $\sqrt[3]{(x+8)}$ scores 2
8	**(b)**		A (0, –8) B (2, 0) C (0, 2) D (–8, 0)	**B1** **B2** **B1** **B1** **[5]**	**1.1** **2.2a** **1.1** **1.1**	Condone lack of brackets if meaning is clear FT their B FT their A
8	**(c)**		Midpoint is (1, –4) and Gradient of AB is 4 Gradient of perpendicular bisector is $-\frac{1}{4}$ Equation $y+4=-\frac{1}{4}(x-1)$ $y=-\frac{1}{4}x-3\frac{3}{4}$	**B1** **B1** **M1** **A1** **[4]**	**1.1** **3.1a** **2.2a** **1.1**	FT their A and B. May be implied by later work FT -ve reciprocal of their 4 Or using $y = mx + c$ and attempting to evaluate c Must be using their midpoint and their $-\frac{1}{4}$ Final answer

			Either			
8	**(d)**		$(0 - a)^2 + (2 - b)^2 = r^2$ using C $(0 - a)^2 + (-8 - b)^2 = r^2$ using A $(2 - a)^2 + (0 - b)^2 = r^2$ using B $(-8 - a)^2 + (0 - b)^2 = r^2$ using D			
			Setting up any 2 of the above equations	**M1**	**3.1a**	
			Attempting to solve to find a or b	**M1**	**3.1a**	May solve all 4 which also earns 3rd method mark
			Centre (-3, -3) oe	**A1**	**1.1**	
			Using their centre and another point (A, B, C or D) to find the radius	**M1**	**2.1**	
			$(x+3)^2 + (y+3)^2 = 34$ cao	**A1**	**2.2a**	
				[5]		
			Or			
			Intersection of any 2 of $y = x$, $x = -3$, $y = -3$, $y = -\frac{1}{4}x - 3\frac{3}{4}$, $y = -4x - 15$	**M1**	**3.1a**	Identifying 2 perp bisectors of 2 chords eg BD and AC, or AB and CD
			Attempting to solve to find intersection point	**M1**	**3.1a**	
			$(-3, \ -3)$	**A1**	**1.1**	
			Using their centre and another point (A, B, C or D) to find the radius	**M1**	**2.1**	
			$(x+3)^2 + (y+3)^2 = 34$	**A1**	**2.2a**	
				[5]		