

Question	Answer	Marks	Guidance
(a)	$(-2)^2 + y^2 = 8$ leading to $y = 2$ leading to $A = (0, 2)$	B1	
	Substitute $y = \text{their } 2$ into circle leading to $(x - 2)^2 + 4 = 8$	M1	Expect $x = 4$.
	$B = (4, 2)$	A1	
		3	
(b)	Attempt to find $[\pi] \int (8 - (x - 2)^2) dx$	*M1	
	$[\pi] \left[8x - \frac{(x - 2)^3}{3} \right]$ or $[\pi] \left[8x - \left(\frac{x^3}{3} - 2x^2 + 4x \right) \right]$	A1	
	$[\pi] \left(32 - \frac{16}{3} \right)$ or $[\pi] \left[32 - \left(\frac{64}{3} - 32 + 16 \right) \right]$	DM1	Apply limits $0 \rightarrow \text{their } 4$.
	Volume of cylinder = $\pi \times 2^2 \times 4 = 16\pi$	B1 FT	OR from $\pi \int 2^2 dx$ with <i>their</i> limits from (a) . FT on <i>their</i> A and B
	$\left[\text{Volume of revolution} = 26\frac{2}{3}\pi - 16\pi = \right] 10\frac{2}{3}\pi$	A1	Accept 33.5
		5	