20	$x^2+(7-2x)^2=34$	$\left(\frac{7-y}{2}\right)^2+y^2=34$		5	M1	substitution of linear equation into quadratic
	$5x^2-28x+15[=0]$ oe	$5y^2-14y-87[=0]$ oe			M1	dep on previous M1 for multiplying out and collecting terms, forming a three term quadratic in any form of $ax^2 + bx + c$ (= 0) **where at least 2 coefficients** (a or b or c) **are correct** and all are non-zero
	$(5x – 3)(x – 5)$ [= 0] or $\frac{-(-28)\pm\sqrt{(-28)^2-4\times5\times15}}{2\times5}$ or $5[(x-\frac{28}{10})^2-\frac{784}{100}]+15=0$ oe or $x = 0.6$ **and** $x = 5$ (allow incorrect labels for x/y)	$(5y − 29)(y + 3)$ [= 0] or $\frac{-(-14)\pm\sqrt{(-14)^2-4\times5\times(-87)}}{2\times5}$ or $5[(y-\frac{14}{10})^2-\frac{196}{100}]-87=0$ oe or $y = 5.8$ **and** $y = −3$ (allow incorrect labels for x/y)			M1ft	dep on M1 for solving *their* 3 term quadratic equation using any correct method (if factorising, allow brackets which expanded give 2 out of 3 terms correct) (if using formula allow one sign error and some simplification – allow as far as $\frac{28\pm\sqrt{784-300}}{10}$ or $\frac{14\pm\sqrt{196+1740}}{10}$) (if completing the square allow as far as shown) or **correct values for *x*** or **correct values for *y* dep on correct quadratic**
	eg $y = 7 – 2 \times 5$ and $y = 7 – 2 \times 0.6$ (correct labels for x/y)	eg $5.8 = 7 – 2x$ and $–3 = 7 – 2x$ (correct labels for x/y)			M1ft	dep on previous M1 for substituting **their** 2 found values of x or y in a suitable equation **or** correct values for the other variable
	Working must be shown		$x = 0.6$, $y = 5.8$ $x = 5$, $y = −3$		A1	dep on M1 and **the correct quadratic** (allow coordinates) must be paired correctly

				Total 5 marks

Question	Working	Answer	Mark	Notes
21	$r = \sqrt{\frac{49\pi}{4\pi}}$ oe (= 3.5)		3	M1
	[volume =] $\frac{4}{3} \times \pi \times "3.5"^3$			M1
	Correct answer scores full marks (unless from obvious incorrect working)	180		A1 awrt 180
				Total 3 marks