5	Finds equation for dr in terms of r and A Let $A =$ area of the circle $A = \pi r^2$ $\frac{dA}{dr} = 2\pi r$ $dr = \frac{dA}{2\pi r}$	M1
	Eliminates dr $\frac{\frac{dA}{2\pi r}}{dt} = \frac{1}{3r^2}$	M1
	Rearranges for $\frac{dA}{dt}$ and simplifies $\frac{dA}{dt} = \frac{2\pi r}{3r^2} = \frac{2\pi}{3r}$	M1
	Start of process to rearrange to given form e.g. $\frac{dA}{dt} = \frac{2\pi^2}{3\pi r}$ $\left(\frac{dA}{dt}\right)^2 = \frac{4\pi^4}{9\pi^2 r^2}$ $\left(\frac{dA}{dt}\right)^2 = \frac{4\pi^3}{9\pi r^2}$	M1
	Substitution of $A = \pi r^2$ e.g. $\left(\frac{\mathrm{dA}}{\mathrm{dt}}\right)^2 = \frac{4\pi^3}{9A}$	M1
	Continuation of process of rearranging resulting in, $\frac{dA}{dt} = +\sqrt{\frac{4\pi^3}{9A}}$ Do not accept $\pm\sqrt{\frac{4\pi^3}{9A}}$ since $r > 0$ $a = 4, b = 9$	M1 a and b may be stated or implied
	Accept sensible alternative methods	**[6]** **[6 marks]**