

Q	Marking Instructions	AO	Marks	Typical Solution
6	<p>Expresses $\frac{1}{x\sqrt{x}}$ as $x^{-\frac{3}{2}}$ or $x^{-1.5}$ or $x^{-1\frac{1}{2}}$</p> <p>PI completes correct integration</p> <p>Condone incorrect use of '2'</p> <p>NB $a = 16$ with no justification scores 0/5</p>	1.1a	M1	$\frac{2}{x\sqrt{x}} = 2x^{-\frac{3}{2}}$ $3 = \int_1^a 2x^{-\frac{3}{2}} dx$ $= [-4x^{-\frac{1}{2}}]_1^a$ $3 = -4a^{-\frac{1}{2}} + 4$
	Carries out correct integration to obtain $-4x^{-\frac{1}{2}}$ OE	1.1b	A1	$a^{-\frac{1}{2}} = \frac{1}{4}$
	<p>Forms an equation by equating 3</p> <p>PI by</p> <ul style="list-style-type: none"> • correct integral $[-4x^{-\frac{1}{2}}]_1^a$ • original expression as integral with powers $\int 2x^{-\frac{3}{2}} dx$ • original expression as integral $\int \frac{2}{x\sqrt{x}} dx$ • 'Their' integration with limits 1 and a • 'Their' expression after integration and after using limits 1 and a <p>Condone limits interchanged</p> <p>If assuming $a = 16$ and then trying to verify scores M1A1M1 max</p>	3.1a	M1	$a = 16$
	Substitutes $x = 1$ as the lower limit and $x = a$ as the upper limit into 'their' integrated expression and subtracts	1.1a	M1	
	Obtains $a = 16$ CAO	1.1b	A1	
Total			5	