Indices

2008 P1	**9.** Simplify $m^3 \times \sqrt{m}.$	2	
Ans	$m^{\frac{7}{2}}$		
2007 P1	**7.** Remove brackets and simplify $a^{\frac{1}{2}}(a^{\frac{1}{2}} - 2).$	2	
Ans	$a - 2a^{1/2}$		
2007 P1	**14.** The **sum** S_n of the first n terms of a sequence, is given by the formula $S_n = 3^n - 1.$ (*a*) Find the **sum** of the first 2 terms. (*b*) When $S_n = 80$, calculate the value of n.		1 2
Ans	(a) 8 (b) 4		
2006 P2	(*b*) Expand $m^{\frac{1}{2}}(2 + m^2).$	2	
Ans	$2m^{1/2} + m^{5/2}$		
2004 P1	(*b*) Evaluate $2^0 + 3^{-1}.$	2	
Ans	(*b*) $1\frac{1}{3}$		
2003 P1	**12.** (*a*) Evaluate $8^{\frac{2}{3}}.$	2	
Ans	4		

2002 P1	**11.** Express in its simplest form $y^8 \times (y^3)^{-2}$.	2	
Ans	**11.** y^2		
2001 P1	**11.** The intensity of light, I, emerging after passing through a liquid with concentration, c, is given by the equation $I = \frac{20}{2^c} \quad c \geq 0.$ (*a*) Find the intensity of light when the concentration is 3. (*b*) Find the concentration of the liquid when the intensity is 10. (*c*) What is the maximum possible intensity?	1 2	3
Ans	**11.** (*a*) $I = \frac{20}{8}$ (*b*) $c = 1$ (*c*) 2^c is a Minimum $2^c = 1$ $I = 20$		
2000 P1	**9.** (*a*) Remove the brackets and simplify $a^{\frac{1}{2}}\left(a + \frac{1}{a}\right)$.	2	
Ans	**9.** (*a*) $a^{\frac{3}{2}} + \frac{1}{a^{\frac{1}{2}}}$ **OR** $a^{\frac{3}{2}} + a^{-\frac{1}{2}}$		