

1(a)	$2n^2(n+1)^2 + 2n(n+1)(2n+1) + 2n(n+1) + 3n$
	$= 2n^4 + 8n^3 + 10n^2 + 7n$
1(b)	$\frac{1}{r^4} - \frac{1}{(r+1)^4} = \frac{(r+1)^4 - r^4}{r^4(r+1)^4} = \frac{r^4 + 4r^3 + 6r^2 + 4r + 1 - r^4}{r^4(r+1)^4} = \frac{4r^3 + 6r^2 + 4r + 1}{r^4(r+1)^4}$
	$\sum_{r=1}^n \frac{4r^3 + 6r^2 + 4r + 1}{r^4(r+1)^4} = \sum_{r=1}^n \left(\frac{1}{r^4} - \frac{1}{(r+1)^4} \right)$ $= 1 - \frac{1}{2^4} + \frac{1}{2^4} - \frac{1}{3^4} + \dots + \frac{1}{n^4} - \frac{1}{(n+1)^4}$
	$= 1 - \frac{1}{(n+1)^4}$
1(c)	1