| What students need to learn: |  |  |
| :--- | :--- | :--- |
|  | Content |  |
|  |  |  |


| Topic | What students need to learn: |  |  |
| :---: | :---: | :---: | :---: |
|  | Content |  | Guidance |
| 4 <br> Further algebra and functions continued | 4.4 | Understand and use the method of differences for summation of series including use of partial fractions. | Students should be able to sum series such as $\sum_{r=1}^{n} \frac{1}{r(r+1)}$ by using partial fractions such as $\frac{1}{r(r+1)}=\frac{1}{r}-\frac{1}{r+1}$ |
|  | 4.5 | Find the Maclaurin series of a function including the general term. |  |
|  | 4.6 | Recognise and use the Maclaurin series for $\mathrm{e}^{x}, \ln (1+x)$, $\sin$ $x, \cos x$ and $(1+x)^{n}$, and be aware of the range of values of $x$ for which they are valid (proof not required). | To include the derivation of the series expansions of compound functions. |

