**9I Concave & Convex Functions**

1. Find the interval on which the function $f\left(x\right)=x^{3}+4x+3$ is concave.
2. Show that the function $f\left(x\right)=e^{2x}+x^{2}$ is convex for all real values of $x$.
3. The curve $C$ has equation $y=x^{3}-2x^{2}-4x+5$
4. Show that C is concave on the interval $\left[-2,0\right]$ and convex on the interval $\left[1,3\right]$
5. Find the coordinates of the point of inflection