$\qquad$

1) Find the derivative of $f(z)=z^{5} e^{z^{3}}$.
2) Show that the function $f(z)=z^{2}+(2+i) z$ is analytic.
3) Find the derivative of $f(z)=\frac{3 z^{2}+2}{5 z^{2}-7 z}$ at infinity.
