Use the graphing strategy to analyse the function and sketch the graph of :

1) $f(x)=\left(x-1\right)^{2}(x+2)$ ;

2) $f\left(x\right)=\frac{x^{2}}{1-x^{2}}$;

3) $f\left(x\right)=\frac{-2x+1}{2x^{2}-4}$;

4) $f\left(x\right)=(x-1)^{\frac{2}{3}}$;

5) $ f\left(x\right)=xe^{-x^{2}}.$