**Bonus – Local Linear Approximation**

Let’s estimate the value of $\sqrt{4.2}$

Use local linear approximation to estimate the value of $\sqrt[3]{26}$

Find the linear approximation of $f\left(x\right)=x^{3}-x$ about $x=1$ and use it to estimate $f(0.9)$

Given the equation $3\left(x^{2}+y^{2}\right)^{2}-100xy=0$, use local linear approximation at $(3, 1)$ to estimate $f(3.1)$