Problem.

(a) Use a linear approximation to $f(x) = \sin(x)$ to estimate $\sin(0.1)$. Make sure to pick a sensible value for a so that you can compute the answer!

(b) Repeat (a) with $g(x) = \cos(x)$ to estimate $\cos(0.1)$.

(c) Which estimate is more accurate? Feel free to use both mathematics and pictures in your explanation.