$ML \rightleftharpoons M + L$ (K_D; L = LIGAND)

$K_D = \frac{[M][L]}{[ML]}$

$\theta = \frac{[ML]}{[M]+[ML]} = \frac{1}{1+K_D/[L]}$

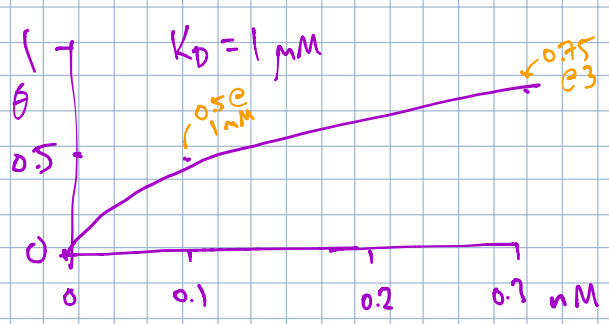
$0.1 = \frac{1}{1+K_D/L}$

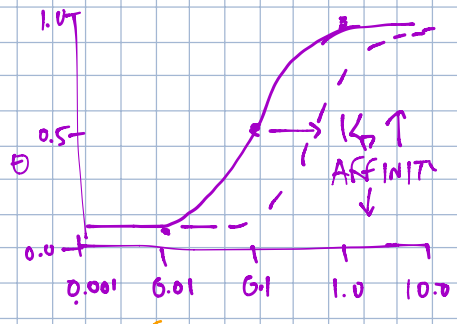
$0.1(1+K_D/L) = 1$

$0.1 + 0.1\,K_D/L = 1$

$0.1\,K_D/L = 1.1$

$K_D/L = 11$





IF I MOVE CURVE TO RIGHT
DO I HAVE HIGHER AFFINITY?

$\Delta G_{EST} = -RT\ln(K_D)$

$= -0.0083 \cdot 300 \cdot \ln(1E{-}10)$

$= -57$ kJ/mol

$\Delta G_{TES} = -23$ kJ/mol

$\Delta\Delta G = -34$ kJ/mol

< 0.2 nM
0.2 - 2 nM

$\theta_{0.2} = \frac{1}{1+0.1/0.2} = 0.66$ ↓ RESPONDS

$\theta_{2.0} = \frac{1}{1+0.1/2} = 0.95$