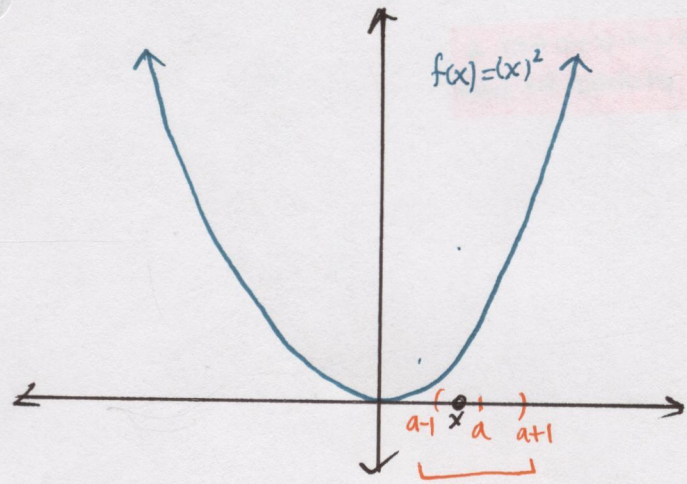


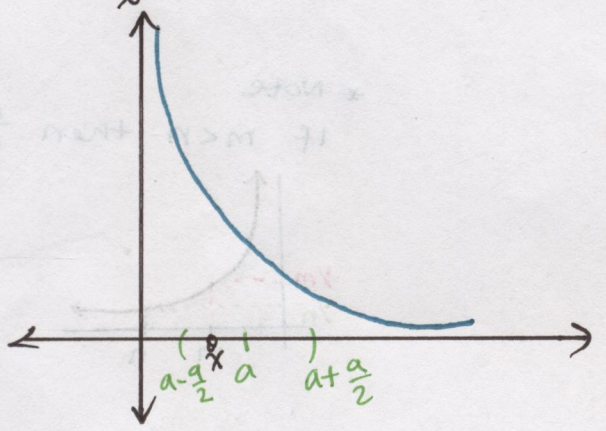
$f(x) = x^2$ is continuous for all a



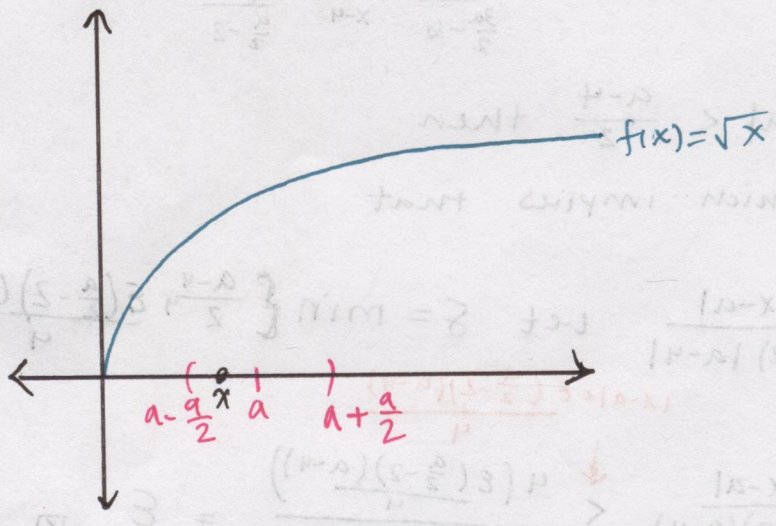
Assume $\delta \leq 1$

$$\frac{|a-x|}{|a-x|} = \frac{|(a-x)(\mu-x)|}{(\mu-x)|a-x|} = \frac{|\mu^2 + x\mu - \mu a - x a|}{|\mu-x||\mu-x|} = \left| \frac{(\mu-x)\mu - (\mu-a)x}{(\mu-x)(\mu-x)} \right| = \left| \frac{\mu - a}{\mu-x} - \frac{x}{\mu-x} \right|$$

$f(x) = \frac{1}{x}$, $a > 0$. assume $\delta \leq \frac{a}{2}$



$f(x) = \sqrt{x}$. Assume $\delta \leq \frac{a}{2}$



$$\frac{|a-x|}{|a-x|} > \frac{|a-x|\mu}{|\mu-a||\mu-x|} = \left| \frac{\mu}{\mu-a} - \frac{x}{\mu-x} \right|$$