7. $f(x) = \dfrac{3}{(1+e^{-2x})}$

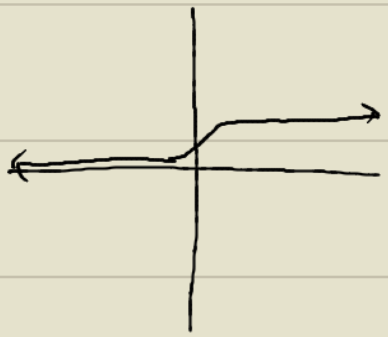
$$\lim_{x\to\infty} \frac{3}{1+e^{-2x}}$$

$$= \lim_{x\to\infty} \frac{3}{1+\frac{1}{e^{2x}}}$$

$$= \frac{3}{1+\frac{1}{e^{2(\infty)}}}$$

$$= \frac{3}{1+0}$$

$$= 3$$



$e^{-2x} = 0$

$\ln e^{-2x} = \ln 0$

$-2x = \ln 0$

CONT.

$1 + e^{-2x} = 0$

$e^{-2x} = -1$

$\ln e^{-2x} = \ln(-1)$

CONT: $(-\infty, \infty)$

INTEREST FORMULAS

"DOESN'T SAY CONTINUOUS"

$$A = P\left(1+\frac{r}{n}\right)^{nt}$$

SAYS CONTINUOUS

$$A = Pe^{rt}$$

A = ENDING AMT

P = PRINCIPLE

r = RATE (DECIMAL)

t = TIME (YEARS)

n = NUMBER OF TIMES COMPOUNDED PER YEAR

ANNUAL: $n=1$

SEMI-ANNUAL: $n=2$

QUARTERLY: $n=4$

MONTHLY: $n=12$

WEEKLY: $n=52$

DAILY: $n=365$

HOURLY: $n=365(24)$