Quiz 10   Name: _____Key_____

You must show your work to get full credit.

A model for discrete population that is sometimes used instead of the logistic model, is the **Ricker model** which is

$$N_{t+1} = N_t e^{r(1-N_t/K)}$$

where r is the intrinsic growth rate and K is the carrying capacity. Let us look at a special case

$$N_{t+1} = N_t e^{1.2(1-N_t/20)}.$$

(1) Use your calculator to graph both $y = x$ and $y = xe^{1.2(1-x/20)}$ on the same plot on the interval $0 \le x \le 50$. Make a sketch of that graph here:
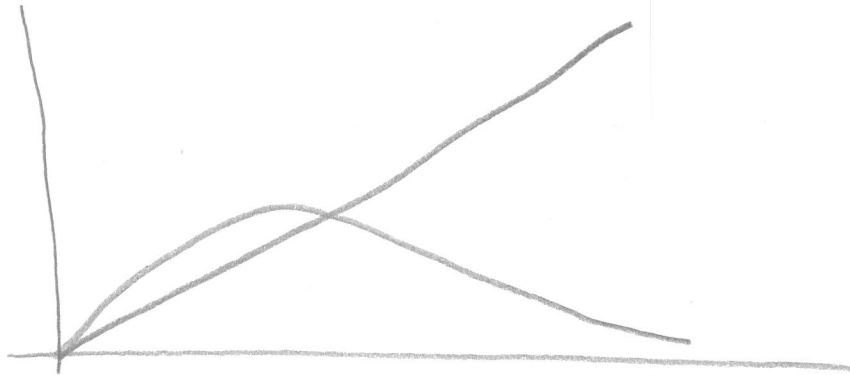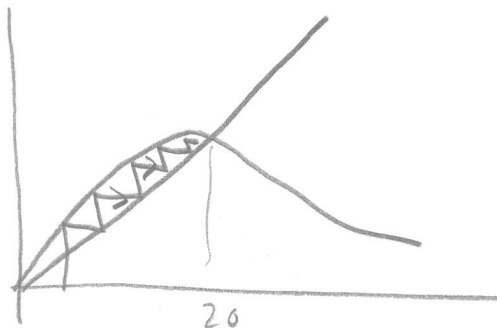

(2) What are the equilibrium points?

Equilibrium points are: ___0, 20___

Found using the 2nd calc. Intersect function of the calculator.

(3) If $N_0 = 5$ estimate N_{30}.

$N_{30} \approx$ ___20___