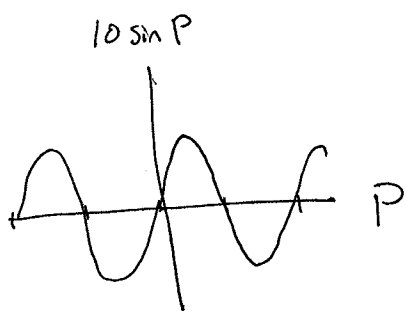


Quiz 5

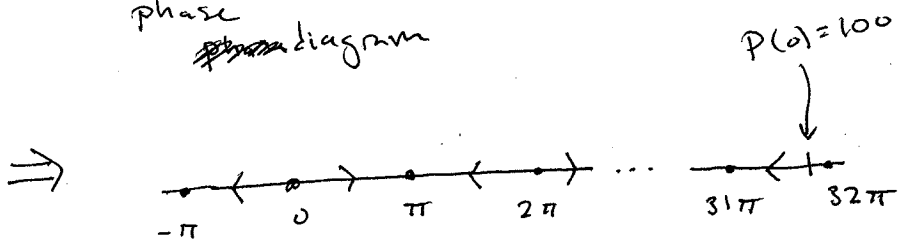
Suppose a population $P(t)$ of fish changes according to the following rule: the rate of change of the population is equal to 10 times the sine of the population.

If $P(0) = 100$ fish, find $\lim_{t \rightarrow \infty} P(t)$.

$$\frac{dP}{dt} = 10 \sin P$$



phase ~~phase~~ diagram



So $\lim_{t \rightarrow \infty} P(t) = 31\pi$