Quiz #30   Name: _____ Key _____

You must show your work to get full credit.

Due to pollution in a lake, bass are dying off at a rate of $f(t)$ bass/week where t is the number of weeks since ACME corporation opened its plant at the lake.

(1) Write an integral in terms that represents the number of bass that die in the first two months the plant is open.

2 pts

$$\int_0^8 f(t)\,dt$$

(2) If the lake started with 10,000 bass and the death rate is $f(t) = \dfrac{50 + 100t}{1 + t}$ then how many bass are left in the lake 30 weeks after the plant opens?

3 pts

$$7172$$
$$(7171 \text{ also ok})$$

$$10,000 - \int_0^{30} \frac{50 + 100t}{1 + t}\,dt$$

$$= 10,000 - \text{fnInt}\left((50 + 100x)/(1+x), x, 0, 30\right)$$

$$= 7171.699 = 7172 \text{ to the nearest fish}$$