Quiz 32   Name: _____Key_____

You must show your work to get full credit.

During the zombie apocalypse the living in Columbia are being converted into the walking dead at a rate of

$$f(t) = \frac{5{,}000}{10 + t^2} \text{ persons per day}$$

where t is the number of days since the start of the apocalypse.

1. In $\int_0^{30} f(t)\, dt$

What are the units of 0 and 30? _____days_____

$(\text{units of } f(t)) \times (\text{units of } t)$

$= \frac{persons}{days} \times days = persons$

What are the units of $\int_0^{30} f(t)\, dt$? _____Persons_____

2. Use your calculator to compute the number of living that are converted into the undead in the first 30 days of the apocalypse. As usual say what you entered into your calculator.

The number is _____2317.59_____

This will be

$$\int_0^{30} f(t)\, dt = \int_0^{30} \frac{5000}{10 + t^2}\, dt$$

math 9 $\int_{0}^{30} 5000/(10 + X^2)\, dX = 2317.59$

$\approx 2318 \text{ persons}$