Quiz 5

Name: _____

1. Use Euler's method with the DE given below, initial condition $y(0) = 5$, and step size $\Delta t = 1$ to estimate $y(2)$.

$$\frac{dy}{dt} = t^3 + 1.$$

$y'(0) = 1$, so the rise is $1 \cdot 1 = 1$, and thus $y(1) = 5 + 1 = 6$.
For the next stage, $y'(1) = 2$, the rise is $2 \cdot 1 = 2$, and so $y(2) = 6 + 2 = 8$.