

Quiz 1

Names:

1. Let $y = (f(x))^p$. Find $\frac{d^2y}{dx^2}$.

2. A yam is put in a hot oven, maintained at a constant temperature $200^\circ C$. At time $t = 30$ minutes, the temperature T of the yam is $120^\circ C$ and is increasing at an (instantaneous) rate of $2^\circ C/\text{min}$. Newton's law of cooling (or, in our case, warming) implies that the temperature at time t is given by $T(t) = 200 - ae^{-bt}$. Find the constants a and b .