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Quiz – September 3, 2004

Find $\frac{dy}{dx}$ for $y = 10^{(x^2)} + (x^2)^{10}$.

Answer: We see that $y = e^{(x^2) \ln 10} + x^{20}$; and therefore,

$$\frac{dy}{dx} = 2x(\ln 10)e^{(x^2) \ln 10} + 20x^{19} = \boxed{2x(\ln 10)10^{(x^2)} + 20x^{19}}.$$