1. Find the following integrals:

$a) \int 3x^5 \, dx$

$b) \int (\sqrt[3]{x} - 4) \, dx$

$c) \int \left(\frac{1}{x} + e^{7x}\right) \, dx$

2. Find the function $f(x)$ whose tangent line has slope $3x + 2$ and whose graph passes through $(3,0)$.

3. Find the *particular* solution of the differential equation $\frac{dy}{dx} = 4x^3y^2$, given the condition that $y = 2$ when $x = 1$.

Q: What is the word that everybody always says wrong?