1. False. Even though they tend to be difficult to compute, they are very useful for proving integration laws and many other things.

2. False. u-substitution is very useful, but it undoes the chain rule, not the product rule.

3. (a) There are two possible answers here. If you chose $u = \cos(x)$, then you'll get $F(x) = -\frac{1}{2}\cos(x)^2 + C$. If instead you chose $u = \sin(x)$, then you'll get $F(x) = \frac{1}{2}\sin(x)^2 + C$. (Can you explain why there are two possible answers here?)

   (b) We are given $a(t) = 10$. To compute the velocity $v(t) = \int a(t)dt$, we find the antiderivative and use the initial condition. $v(t) = \int 10dt = 10t + C$. We are given $v(0) = 0$, so $C = 0$ here. Thus $v(t) = 10t$.

   To find the position $x(t) = \int v(t)dt$, we again find the antiderivative and use the initial condition. $x(t) = \int 10tdt = 5t^2 + C$. We are given $x(0) = 0$, so $x(t) = 5t^2$.