$\frac{d(-tan(x-x^2y(x)))}{dx} = \frac{d(x)}{dx}$
Factor out constants $-\frac{d(tan(x-x^2y(x)))}{dx} = \frac{d(x)}{dx}$
$\frac{d(x)}{dx} = 1$
Using the chain rule,
$\frac{d(tan(x-x^2y(x)))}{dx} = \frac{du}{dx} * sec^2(u)$ where $u = x - x^2y(x)$
and
$\frac{dtan(u)}{du} = sec^2(u)$
we get
$(-1) * (sec^2(x - x^2y(x))\frac{d(x-x^2y(x))}{dx} = 1$
$(-1)sec^2(x - x^2y(x))(\frac{d(x)}{dx} - \frac{d(x^2y(x))}{dx}) = 1$
$-sec^2(x - x^2y(x))(1 - \frac{d(x^2y(x))}{dx}) = 1$
Use the product rule
$\frac{d(uv)}{dx} = v * \frac{du}{dx} + u * \frac{dv}{dx}$
where $u = x^2$, $v = y(x)$
$-sec^2(x - x^2y(x))(-y(x) * \frac{d(x^2)}{dx} - x^2y'(x) + 1) = 1$
Then we get
$-(-x^2y'(x) - 2xy(x) + 1)sec^2(x - x^2y(x)) = 1$
and finaly
$y'(x) = (cos^2(x - x^2y) - 2xy + 1)/x^2$