8. $e^{3xy} + 7x^3 - 2y = 5$

$\frac{d}{dx}(e^{3xy}) + \frac{d}{dx}(7x^3) + \frac{d}{dx}(-2y) = \frac{d}{dx}(5)$

$e^{3xy} \cdot \frac{d}{dx}(3xy) + 21x^2 - 2y' = 0$

$3e^{3xy} \cdot \frac{d}{dx}(\underbrace{x}_{P}\underbrace{y}_{Q}) + 21x^2 - 2y' = 0$

$P' = 1 \quad Q' = 1 \cdot y'$

$P'Q + PQ'$

$3e^{3xy} \cdot (1 \cdot y + x y') + 21x^2 - 2y' = 0$

$3e^{3xy}(y + xy') + 21x^2 - 2y' = 0$

$3ye^{3xy} + 3xy'e^{3xy} + 21x^2 - 2y' = 0$

$3ye^{3xy} + 21x^2 = 2y' - 3xy'e^{3xy}$

$3ye^{3xy} + 21x^2 = y'(2 - 3xe^{3xy})$

$\frac{3ye^{3xy} + 21x^2}{2 - 3xe^{3xy}} = \frac{y'(2 - 3xe^{3xy})}{2 - 3xe^{3xy}}$

$\frac{3ye^{3xy} + 21x^2}{2 - 3xe^{3xy}} = y'$

$y' = \frac{3ye^{3xy} + 21x^2}{2 - 3xe^{3xy}}$ *

BUT RECALL

$e^{3xy} + 7x^3 - 2y = 5$

$e^{3xy} = 5 - 7x^3 + 2y$

SO WE CAN REPLACE e^{3xy}'s WITH $5 - 7x^3 + 2y$

$y' = \frac{3y(5 - 7x^3 + 2y) + 21x^2}{2 - 3x(5 - 7x^3 + 2y)}$

$y' = \frac{15y - 21x^3y + 6y^2 + 21x^2}{2 - 15x + 21x^4 - 6xy}$