

Quiz 02

Linear Equations

(9 points) (a) Circle the correct choice below and fill in the answer boxes to complete the statement. **(No partial credits)**

Given the standard form of linear equations $\frac{dy}{dx} + P(x)y = Q(x)$, then the integrating factor $\mu(x)$ is **$\exp[\int P(x)dx]$ / $\exp[\int Q(x)dx]$** which reduces the equation to $\frac{d}{dx}(\mu(x)y) = \text{-----}$, so that $y = \text{-----}$.
(express y by $P(x)$, $Q(x)$, $\mu(x)$ and denote constant as C)

Special Integrating Factors

(11 points) (b) Find an integrating factor of the form $x^n y^m$ which can solve the equation

$$(3xy^2 - 8y)dx + (4x^2y - 12x)dy = 0.$$

Just determine the value of m , n and **no need to solve this equation**.

Please answer the question in complete sentences in a **clearly** prepared manuscript. **(No credits** for the answer without necessary explanation.)

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Special number: _____ Name: _____
Section Number: _____ PUID: _____