Determine for which values of $m$ the function $\phi(x) = e^{mx}$ is a solution to the given equation. Explain your work.

(a) \[ \frac{d^2 y}{dx^2} + 6 \frac{dy}{dx} + 5y = 0 \]

(b) \[ \frac{d^3 y}{dx^3} + 3 \frac{d^2 y}{dx^2} + 2 \frac{dy}{dx} = 0. \]

Solution: