

$$\phi = A \exp \left[-\frac{3}{2} \left(1 + \sqrt{1 - \frac{4 m^2}{9 H_0^2}} \right) H_0 t \right] + B \exp \left[-\frac{3}{2} \left(-1 - \sqrt{1 - \frac{4 m^2}{9 H_0^2}} \right) H_0 t \right]$$