

## 11.7: General solutions

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One of the reasons for playing such game is that we can rewrite the kinetic energy as

$$-\frac{\hbar^2}{2m}\hat{p}^2 f(\mathbf{r}) = -\frac{\hbar^2}{2m} \frac{1}{r^2} \frac{\partial}{\partial r} \left( r^2 \frac{\partial}{\partial r} f(\mathbf{r}) \right) + \frac{1}{r^2} \hat{L}^2 f(\mathbf{r}) \quad (11.7.1)$$

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