Consider the differential equation $6x^2 y'' + 5xy' - (1 + x)y = 0$.

Describe the solutions of the form $x^r \sum_{n=0}^{\infty} a_n x^n = \sum_{n=0}^{\infty} a_n x^{n+r}$ by finding the solutions $r$ of the indicial equation and the associated recurrence relations that determine $a_n, n \geq 1$, in terms of $r$ and $a_0$. 