We consider the singular boundary value problem

\[-r(x)y'(x) + q(x)y(x) = f(x), \quad x \in \mathbb{R} \quad (1)\]

\[\lim_{|x| \to \infty} y(x) = 0, \quad (2)\]

where \(f \in L_p(\mathbb{R}), \ p \in [1, \infty] \ (L_\infty(\mathbb{R}) := C(\mathbb{R}))\), \(r\) is a continuous positive function on \(\mathbb{R}\), \(0 \leq q \in L_1^{\text{loc}}(\mathbb{R})\). A solution of this problem is, by definition, any absolutely continuous function \(y\) satisfying the limit condition and almost everywhere the differential equation. This problem is called correctly solvable in a given space \(L_p(\mathbb{R})\) if for any function \(f \in L_p(\mathbb{R})\) it has a unique solution \(y \in L_p(\mathbb{R})\) and if the following inequality holds with an absolute constant \(c_p \in (0, \infty)\) :

\[\|y\|_{L_p(\mathbb{R})} \leq c_p \|f\|_{L_p(\mathbb{R})}, \quad \forall f \in L_p(\mathbb{R}). \quad (3)\]

We find a relationship between \(r, q,\) and the parameter \(p \in [1, \infty]\), which guarantees the correctly solvability of the problem (1) and (2) in \(L_p(\mathbb{R})\).