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Abstract: We start by studying the existence of positive solutions for the differential equation $u'' = a(x)u - g(u)$, with $u(0) = u(+\infty) = 0$, where a is a positive function, and g is a power or a bounded function. In other words, we are concerned with even positive homoclinics of the differential equation. The main motivation is to check that some well-known results concerning the existence of homoclinics for the autonomous case (where a is constant) are also true for the non-autonomous equation. This also motivates us to study the analogous fourth-order boundary value problem $\{u^{(4)} - cu'' + a(x)u = |u|^{p-1}u, u'(0) = u'''(0) = 0, u(+\infty) = u'(+\infty) = 0\}$ for which we also find nontrivial (and, in some instances, positive) solutions. (C) 2010 Elsevier Ltd. All rights reserved.

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