



Chapter 3 Section 6

Let $x_1(t)$ and $x_2(t)$ be two functions (typically, we're thinking of these as being two solutions of an ODE). Then their *Wronskian* is:

$$W[x_1, x_2](t) := \det \begin{pmatrix} x_1(t) & x_2(t) \\ x_1'(t) & x_2'(t) \end{pmatrix} :=$$

Notice that if x_1 and x_2 are linearly independent, then $W[x_1, x_2](t) \neq 0$. Indeed if it did then:



Chapter 3 Section 6

There is a formula for determining the solution to a non-homogeneous equation:

$$x''(t) + p(t)x'(t) + q(t)x(t) = g(t),$$

if we know two linearly independent solutions x_1 and x_2 of the CHE.



Chapter 3 Section 6



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Find the general solution to $x'' + 4x = 8 \tan t$, $-\frac{\pi}{2} < t < \frac{\pi}{2}$.