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4.28 Let $C = \{\langle G, x \rangle \mid G$ is a CFG x is a substring of some $y \in L(G)\}$. Show that C is decidable

We can create Turning Machine M

$M = $ Input: $\langle G, x \rangle$ where G is a CFG and x is a string

1. Let R be the following RE $R = \Sigma^* x \Sigma^*$
2. Create CFG A s.t. $L(A) = L(G) \cap L(R)$
3. Enter $\langle H \rangle$ to the decider for E_{CFG}
4. if it accepts, then REJECT
5. Otherwise, REJECT