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Claim: N decides A_{TM} (\Rightarrow):
 For any TM M & string w ,
 $\langle M, w \rangle \in A_{TM} \Rightarrow M$ accepts w
 $\Rightarrow R$ accepts all inputs
 $\Rightarrow L(R) = \Sigma^* \neq \emptyset$
 $\Rightarrow \langle R \rangle \notin E_{TM}$
 $\Rightarrow N$ accepts $\langle M, w \rangle$
 $\langle M, w \rangle \notin A_{TM} \Rightarrow M$ does not accept w
 $\Rightarrow R$ accepts no inputs
 $\Rightarrow L(R) = \emptyset$
 $\Rightarrow \langle R \rangle \in E_{TM}$
 $\Rightarrow N$ rejects $\langle M, w \rangle$

*proof
of claim*

$\therefore A_{TM}$ is decided by N \square
 $\therefore E_{TM}$ is undecidable. \square