AMIRITE

$AMIRITE_{TM} = \{ < M, w, a > | M \text{ is a TM, } a \text{ is the action } M \text{ takes on input } w \}$

$AMIRITE_{TM}$ is undecidable.

Proof:

$HALT_{TM}$ is trivially reducible to $AMIRITE_{TM}$ through the computable function $F$ where:

$F = \text{On input } < M, w > \text{ where } M \text{ is a TM and } w \text{ is a string, return } < M, w, \text{halt} >.$

As such, $< M, w > \in HALT \iff F(< M, w >) \in AMIRITE$.

$\therefore HALT_{TM} \leq_{M} AMIRITE_{TM}.$