

# CS 1511 Homework 5

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## 11 a.

With an input  $I = 101$  for a Turing machine  $M$ , here is one valid computation history  $H$ . In this computation history  $H$ ,  $\text{space} = *$ ,  $q_0 = q_y$ ,  $q_1 = q_p$ .

$\#q_y101*\#1q_p01*\#11q_p1*\#111q_p*\#111q_h*$

This configuration thus ends in the halting state.

## 11 b.