Problem of the Week

Name: _____ Class: _____

Lockers

Suppose you're in a hallway lined with 100 closed lockers. You begin by opening every locker. Then you close every second locker. Then you go to every third locker and open it (if it's closed) or close it (if it's open). Let's call this action toggling a locker. Continue toggling every nth locker on pass number n. After 100 passes, where you toggle only locker #100, how many lockers are open?

You must explain your answer to get credit.