

## Measurements: Production Area Supervisor

### Micron Technology, Inc.

**Job Description:** Supervise, organize and monitor production in the work area while maintaining quality and efficiency. Motivate and evaluate personnel and maintain accurate documentation. Facilitate problem solving and quality improvement activities.

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### Problem:

Our company tests computer chips. Each chip must go through both a HOT test and a COLD test. Your goal for the 30-day month is 25,070,216 chips tested through the HOT and COLD tests.

It takes 472 seconds to test 32 chips through the HOT step and 208 seconds to test 32 chips through the COLD step. Expect to have to retest 5% due to failure to complete test. The plant is open 24 hours a day, 7 days a week.

How many HOT and COLD testers do you need to move an even amount each day?

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### Solution:

$25,070,216 \text{ chips} + 5\% \text{ failures} = 26,323,726 \text{ chips (originally tested)}$

$26,323,726 \text{ chips} \div 30 \text{ days} = 877,458 \text{ chips per day}$

$60 \text{ seconds/minute} \times 60 \text{ minutes/hour} = 3600 \text{ seconds/hr}$

#### HOT TEST:

$3600 \text{ seconds} \div 472\text{-second test} = 7.62 \times 32 \text{ chips per tester} = 244 \text{ chips per hour}$

$244 \text{ chips/hour} \times 24 \text{ hrs/day} = 5,856 \text{ chips per day per tester}$

$877,458 \text{ chips/day} \div 5,856 \text{ chips per tester} = 150 \text{ HOT testers per day}$

#### COLD TEST:

$3600 \text{ seconds} \div 208\text{-second test} = 17.3 \times 32 \text{ chips per tester} = 554 \text{ chips per hour}$

$554 \text{ chips/hour} \times 24 \text{ hrs/day} = 13,296 \text{ chips per day per tester}$

$877,458 \text{ chips/day} \div 13,296 \text{ chips per tester} = 66 \text{ COLD testers per day}$