Frank’s Fabricators has collected the following information to develop a standard time for producing their high-volume Navigator III, a universal remote control. All of the times are in minutes.

Element (in Minutes)

Observations 1 2 3 4 5 6

Cycle 1 1.10 3.00 0.92 1.23 1.46 1.80

Cycle 2 1.08 0.88 1.30 1.64 1.78

Cycle 3 1.15 3.20 0.85 1.26 1.55 1.76

Cycle 4 1.16 0.88 1.33 1.52 1.80

Cycle 5 1.07 3.10 0.90 1.28 1.62 1.82

Cycle 6 1.10 0.94 1.30 1.60 1.82

Rating Factor

0.95 0.90 1.05 1.0 0.85 1.10

Frequency

1. 0.50 1.0 1.0 1.0 1.0

Calculate the mean observed time for each element.

(Round your answers to 3 decimal places, the tolerance is +/-0.001.)

Element Mean observed time

1

2

3

4

5

6

You have twenty-five observations of university policeman Sgt. Jack B. Nimble during his normal workday. The results are shown here. Assume that the estimated proportion is to be within 5 percent of the true proportion 95 percent of the time.

Activity Observed Number of Times Observed

Doing paperwork 9

On the phone 3

Eating doughnuts 3

Cleaning weapon 4

Idle 2

Not in sight 4

Based on your preliminary observations, how many total observations do you need to estimate the proportion of time Sgt. Nimble spends doing paperwork?

How many total observations do you need to estimate the proportion of time Sgt. Nimble spends on the phone?