Assignment 8 Austin Frownfelter

# Problem 1

## Part A

### 1

The number of additions is 23, and the number of products is 0, because we are storing the probabilities rather than computing them.

### 2

The number of additions is 23, and the number of products is 120.

## Part B

Number of additions is 23, and the number of products is 31. This is the same number of sums as before, but the number of products is significantly lower. This is because we are able to calculate the “lesser used” probabilities only when they are “used”, reducing the number of times it is “wastefully” calculated.

# Problem 2

## Part A

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| P(Fever|Pneumonia)   |  |  |  | | --- | --- | --- | |  | T | F | | T | .9 | .1 | | F | .6 | .4 | | P(Paleness|Pneumonia)   |  |  |  | | --- | --- | --- | |  | T | F | | T | .7 | .3 | | F | .5 | .5 | | P(Cough|Pneumonia)   |  |  |  | | --- | --- | --- | |  | T | F | | T | .9 | .1 | | F | .1 | .9 | | P(HWBC|Pneumonia)   |  |  |  | | --- | --- | --- | |  | T | F | | T | .8 | .2 | | F | .5 | .5 | |
| P(Fever)=.606 | P(Paleness)=.884 | P(Cough)=.496 | P(HWBC)=.506 |

P(Pneumonia)=.02

## Part B

## Part C