**LMC Class Worksheet**

For the starting program, write in English what each instruction says to do:

|  |  |  |
| --- | --- | --- |
| 0 | 901 |  |
| 1 | 310 |  |
| 2 | 901 |  |
| 3 | 110 |  |
| 4 | 902 |  |
| 5 | 000 |  |

Write what each line of this program does. What does the whole program do?

|  |  |  |
| --- | --- | --- |
| 0 | 901 |  |
| 1 | 306 |  |
| 2 | 507 |  |
| 3 | 206 |  |
| 4 | 902 |  |
| 5 | 000 |  |
| 6 | 000 | Data Storage |
| 7 | 100 | Data Storage |

Write what each line of this program does. What does the whole program do?   
*(Hint: try running with both positive and negative inputs)*

|  |  |  |
| --- | --- | --- |
| 0 | 901 |  |
| 1 | 310 |  |
| 2 | 806 |  |
| 3 | 511 |  |
| 4 | 210 |  |
| 5 | 310 |  |
| 6 | 902 |  |
| 7 | 000 |  |

Write what each line of this program does.

|  |  |  |
| --- | --- | --- |
| 0 | 901 |  |
| 1 | 314 |  |
| 2 | 515 |  |
| 3 | 114 |  |
| 4 | 315 |  |
| 5 | 513 |  |
| 6 | 212 |  |
| 7 | 313 |  |
| 8 | 802 |  |
| 9 | 515 |  |
| 10 | 902 |  |
| 11 | 000 |  |
| 12 | 001 | Data – the number 1 |
| 13 | 004 | Data – the number 4 |
| 14 | 000 | Data |
| 15 | 000 | Data |

What does the program do to your input?

Which location is used to count down to control the number of additions we do?

Try writing programs that:

**No Branch**

1. Add three numbers you get from input.
2. Takes in two numbers (let us call them x and y). Output 2x - y

**Branch**

1. Takes in two numbers. Outputs the largest one. (Hint – subtract one from the other to decide which is bigger).
2. Has you guess a number. Output 1 if you guess the number correctly, 0 otherwise. (Hint: store the mystery number in a memory location off screen like 50. You will need to have 1 as a data value as well).