



***Josephus***

***Flavius***

***Student Workbook***

Name: \_\_\_\_\_



Are these true?

$$1 + 1 = 10$$

$$10 + 1 = 11$$

$$10 + 11 = 101$$

Can you work out these Binary Sums?

| Question    | Answer |
|-------------|--------|
| 111+100     |        |
| 101+110     |        |
| 1111+111    |        |
| 111-101     |        |
| 110-11      |        |
| 1100-101    |        |
| 1110+10111  |        |
| 1110+1111   |        |
| 11111+11101 |        |

Josephus Flavius – Who wins? (*Remember to number your circles*)





11 people



12 people

You can use this space to create your own circles:

Put your data in a table.

|                      |   |   |   |   |   |   |   |   |   |
|----------------------|---|---|---|---|---|---|---|---|---|
| Number of people (n) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Who wins? J(n)       |   |   |   |   |   |   |   |   |   |

|                      |    |    |    |    |    |    |    |    |     |
|----------------------|----|----|----|----|----|----|----|----|-----|
| Number of people (n) | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 41? |
| Who wins? J(n)       |    |    |    |    |    |    |    |    |     |

What patterns do you notice in your table?

