Practice WORK REPORT №5

« Simple digital circuits design and simulation »

**Principles of Circuits**

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# Task 1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| A | B | C |  |  |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 1 | 0 | 0 | 0 |
| 0 | 1 | 1 | 0 | 0 |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 1 | 0 | 0 |

# Task 2



= A+B

Karnaugh map

|  |  |  |
| --- | --- | --- |
|  |  | C |
|  | 0 | 0 |
|  | 1 | 1 |
|  | 1 | 1 |
|  | 1 | 1 |

True table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| A | B | C |  |  |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 |

# Conclusion

Karnaugh mapping is a systematic approach, which will always produce the simplest configuration possible for the logic circuit.