***Task: Simplifications***

***Guided example***

Simplify the logic circuit!

Q1

&

I1

I2

≥1

1

|  |  |  |  |
| --- | --- | --- | --- |
| I2 | I1 | X | Q1 |
| 0 | 0 | 0 | 0 |
| 0 | 1 | 0 | 1 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 1 |

1. Draw the truth table:
2. Derive the logic function using the truth table:
3. Derive the logic function using the diagram:
4. Simplify the logic circuit!



1

&

I1

Q1

≥1

I2

|  |  |  |  |
| --- | --- | --- | --- |
| I2 | I1 | X | Q1 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 1 |

1. Draw the truth table:
2. Derive the logic function using the truth table:
3. Derive the logic function using the diagram:
4. Simplify the logic circuit!

&

&

I2

I1

Q1

≥1



|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| I2 | I1 | X | Y | Q1 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 1 | 0 | 1 | 1 |
| 1 | 0 | 0 | 0 | 0 |
| 1 | 1 | 1 | 1 | 1 |

1. Draw the truth table:
2. Derive the logic function using the truth table:

=I1

1. Derive the logic function using the diagram:

hier das gleich wie oben aber das ist nicht immer so

=I1

1. Simplify the logic circuit!

≥1

≥1

I2

I1

Q1

&



|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| I2 | I1 | X | Y | Q1 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 1 |

1. Draw the truth table:
2. Derive the logic function using the truth table:

=I1

1. Derive the logic function using the diagram: