* In this worksheet you need to fill in the blanks for each section by converting to the type labeled at the top of the column(Binary, Hexadecimal, Decimal).
* The dark line in the middle is to remind you that when converting to Hexadecimal use the 4-bit binary conversion to help you convert.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Decimal | Convert the rows below from Binary to Decimal and Hexadecimal | | | | | | | | Hexadecimal |
|  |  | Base 2 Ranges | | | | | | |  |
|  | **27** | **26** | **25** | **24** | **23** | **22** | **21** | **20** |  |
|  | 128 (8) | 64 (4) | 32 (2) | 16 (1) | 8 | 4 | 2 | 1 |  |
| 23 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 17 |
| 170 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | AA |
| 6 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 6 |
| 93 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 5D |
| 254 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | FE |
| 107 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 6B |
| 209 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | D1 |
| **Decimal** |  | **Convert the rows below from Hexadecimal to Binary and Decimal** | | | | | | | **Hex** |
| 251 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | FB |
| 20 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 14 |
| 42 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 2A |
| 7 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 7 |
| 255 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | FF |
| 202 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | CA |
| 108 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 6C` |
| **Decimal** |  | **Convert the rows below from Decimal to Binary and Hexadecimal** | | | | | | | **Hex** |
| 78 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 4E |
| 17 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 11 |
| 13 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | D |
| 45 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 2D |
| 193 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | C1 |
| 97 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 61 |
| 255 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | FF |

# Add the following 4-bit numbers:

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

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