Punto 1

1. 099d

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| C1nb | 0 | 9 | 9 |  |
| ⭣ | ⭣ | ⭣ |  |
| 9 | 0 | 0 | = C1n |
|  |  | + | 1 |  |
| Cn = | 9 | 0 | 1 | d |

1. 056d

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| C1nb | 0 | 5 | 6 |  |
| ⭣ | ⭣ | ⭣ |  |
| 9 | 4 | 3 | = C1n |
|  |  | + | 1 |  |
| Cn = | 9 | 4 | 4 | d |

1. 999d

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| C1nb | 9 | 9 | 9 |  |
| ⭣ | ⭣ | ⭣ |  |
| 0 | 0 | 0 | = C1n |
|  |  | + | 1 |  |
| Cn = | 0 | 0 | 1 | d |

1. 900d

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| C1nb | 9 | 0 | 0 |  |
| ⭣ | ⭣ | ⭣ |  |
| 0 | 9 | 9 | = C1n |
|  |  | + | 1 |  |
| Cn = | 1 | 0 | 0 | d |

1. 0101b

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| C1nb | 0 | 1 | 0 | 1 |  |  |
| ⭣ | ⭣ | ⭣ | ⭣ |  |  |
| 1 | 0 | 1 | 0 |  |  |
|  |  |  | + | 1 |  |  |
| Cn = | 1 | 0 | 1 | 1 |  | b |

1. 1010b

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| C1nb | 1 | 0 | 1 | 0 |  |  |
| ⭣ | ⭣ | ⭣ | ⭣ |  |  |
| Cn = | 0 | 1 | 1 | 0 |  | b |

1. 01000000b

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| C1nb | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |  |
| ⭣ | ⭣ | ⭣ | ⭣ | ⭣ | ⭣ | ⭣ | ⭣ |  |
| Cn = | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | b |

1. 01111111b

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| C1nb | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |  |
| ⭣ | ⭣ | ⭣ | ⭣ | ⭣ | ⭣ | ⭣ | ⭣ |  |
| Cn = | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | b |

1. 10000000b

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| C1nb | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |
| ⭣ | ⭣ | ⭣ | ⭣ | ⭣ | ⭣ | ⭣ | ⭣ |  |
| Cn = | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | b |

1. 11111111b

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| C1nb | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |  |
| ⭣ | ⭣ | ⭣ | ⭣ | ⭣ | ⭣ | ⭣ | ⭣ |  |
| Cn = | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | b |

1. FFh

|  |  |  |  |
| --- | --- | --- | --- |
| C1nb | F | F |  |
| ⭣ | ⭣ |  |
| 0 | 0 | = C1n |
|  | + | 1 |  |
| Cn = | 0 | 1 | h |

1. 01h

|  |  |  |  |
| --- | --- | --- | --- |
| C1nb | 0 | 1 |  |
| ⭣ | ⭣ |  |
| F | E | = C1n |
|  | + | 1 |  |
| Cn = | F | F | h |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ñ.** 81h | | | | |
|  | C1nb | 8 | 1 |  |
|  | ⭣ | ⭣ |  |
|  | 7 | E | = C1n |
|  |  | + | 1 |  |
|  | Cn = | 7 | F | h |

1. 7Fh

|  |  |  |  |
| --- | --- | --- | --- |
| C1nb | 7 | F |  |
| ⭣ | ⭣ |  |
| 8 | 0 | = C1n |
|  | + | 1 |  |
| Cn = | 8 | 1 | h |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **o.** 3Eh | | | | |
|  | C1nb | 3 | E |  |
|  | ⭣ | ⭣ |  |
|  | C | 1 | = C1n |
|  |  | + | 1 |  |
|  | Cn = | C | 2 | h |

1. 80h

|  |  |  |  |
| --- | --- | --- | --- |
| C1nb | 8 | 0 |  |
| ⭣ | ⭣ |  |
| 7 | F | = C1n |
|  | + | 1 |  |
| Cn = | 8 | 0 | h |

Punto 2

1. En un formato de 8 bits (1 byte)

* El menor numero que se puede representar es: 10000000b = -128d = 80h
* El mayor numero que se puede representar es: 01111111b = 127d = 7Fh



**Menor (+)**

00000001b

1d

01h

**Mayor (-)**

11111111b

255d

FFh

**Menor (-)**

10000000b

128d

80h

**Mayor (+)**

01111111b

127d

7Fh

0

**Positivo**

Comienza con 0 en binario

Comienza con 1 hasta 7 en hexadecimal

**Negativo**

Comienza con 1 en binario

Comienza con 8 hasta F en hexadecimal

Punto 3

1. 19 + 92

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 19 | ⭢ | 00010011 | + | No hay acarreo.  No hay desbordamiento. |
| + 92 | ⭢ | + 01011100 | + |
| 111 | ⭢ | 01101111 | + |

1. 19 – 92

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 19 | ⭢ | 00010011 | + | No hay acarreo.  No hay desbordamiento. |
| - 92 | ⭢ | + 10100100 | - |
| -73 | ⭢ | 10110111 | - |

10110111b ⭢ 01001001b = 73d

1. 127 + 1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 127 | ⭢ | 01111111 | + | No hay acarreo.  Hay desbordamiento ⭢ es incorrecto |
| ­ + 1 | ⭢ | + 00000001 | + |
| 128 | ⭢ | 10000000 | - |

1. -128 + -1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| -128 | ⭢ | 10000000 | - | Hay acarreo.  Hay desbordamiento ⭢ es incorrecto |
| ­ - 1 | ⭢ | + 11111111 | - |
| -129 | ⭢ | 1 01111111 | + |

1. -128 + 1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| -128 | ⭢ | 10000000 | - | No hay acarreo.  No hay desbordamiento. |
| ­ + 1 | ⭢ | + 00000001 | + |
| -127 | ⭢ | 10000001 | - |

10000001b ⭢ 01111111b = 127d

1. -128 ­+ -128

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| -128 | ⭢ | 10000000 | - | Hay acarreo.  Hay desbordamiento ⭢ es incorrecto |
| ­ - 128 | ⭢ | + 10000000 | - |
| -256 | ⭢ | 1 00000000 | + |

1. -12 ­+ -30

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| -12 | ⭢ | 11110100 | - | Hay acarreo.  No hay desbordamiento. |
| ­ - 30 | ⭢ | + 11100010 | - |
| -42 | ⭢ | 1 11010110 | - |

11010110b ⭢ 00101010b = 42d

1. 127 + -62

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 127 | ⭢ | 01111111 | + | Hay acarreo.  No hay desbordamiento. |
| ­ - 62 | ⭢ | + 11000010 | - |
| 65 | ⭢ | 1 01000001 | + |

1. -127 + 62

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| -127 | ⭢ | 10000001 | - | No hay acarreo.  No hay desbordamiento. |
| ­ + 62 | ⭢ | + 00111110 | + |
| -65 | ⭢ | 10111111 | - |

10111111b ⭢ 01000001b = 65d

Punto 4

|  |  |  |
| --- | --- | --- |
| **a.** | | |
| 19 | ⭢ | 13 |
| ­ + 92 | ⭢ | + 5C |
| 111 | ⭢ | 6F |
| No hay acarreo ni desbordamiento | | |

|  |  |  |
| --- | --- | --- |
| **b.** | | |
| 19 | ⭢ | 13 |
| -92 | ⭢ | + A4 |
| -73 | ⭢ | B7 |
| No hay acarreo ni desbordamiento | | |

|  |  |  |
| --- | --- | --- |
| **c.** | | |
| 127 | ⭢ | 7F |
| ­ + 1 | ⭢ | + 1 |
| 128 | ⭢ | 80 |
| No hay acarreo  Hay desbordamiento | | |

|  |  |  |
| --- | --- | --- |
| **d.** | | |
| -128 | ⭢ | 80 |
| -1 | ⭢ | + FF |
| -129 | ⭢ | 17F |
| Hay acarreo  Hay desbordamiento | | |

|  |  |  |
| --- | --- | --- |
| **e.** | | |
| -128 | ⭢ | 80 |
| ­ + 1 | ⭢ | + 01 |
| -127 | ⭢ | 81 |
| No hay acarreo ni desbordamiento | | |

|  |  |  |
| --- | --- | --- |
| **f.** | | |
| -128 | ⭢ | 80 |
| ­ -128 | ⭢ | + 80 |
| -256 | ⭢ | 100 |
| Hay acarreo  Hay desbordamiento | | |

|  |  |  |
| --- | --- | --- |
| **g.** | | |
| -12 | ⭢ | F4 |
| -30 | ⭢ | + E2 |
| -42 | ⭢ | 1D6 |
| Hay acarreo  No hay desbordamiento | | |

|  |  |  |
| --- | --- | --- |
| **h.** | | |
| 127 | ⭢ | 7F |
| ­ -62 | ⭢ | + C2 |
| 65 | ⭢ | 141 |
| Hay acarreo  No hay desbordamiento | | |

|  |  |  |
| --- | --- | --- |
| **i.** | | |
| -127 | ⭢ | 81 |
| ­ + 62 | ⭢ | + 3E |
| -65 | ⭢ | BF |
| No hay acarreo ni desbordamiento | | |

Punto 2

1. En un formato de 16 bits (1 palabra)

* El menor numero que se puede representar es:

**1000000000000000b = 32768d = 8000h**

* El mayor numero que se puede representar es:

**0111111111111111b = 32767d = 7FFFh**



**Mayor (+)**

0111111111111111b

32767d

7FFFh

**Menor (-)**

1000000000000000b

32768d

8000h

0

**Menor (+)**

0000000000000001b

1d

0001h

**Mayor (-)**

1111111111111111b

65535d

FFFFh