**Hexadecimal & Floating Point**

*See the lesson notes / video at*:[dmaccarthy.github.io/sci/#cs\_new/ct1/hex](https://dmaccarthy.github.io/sci/#cs_new/ct1/hex)

1. Convert each of these hexadecimal (base sixteen) numbers into decimal (base ten). Show your work as in the example below.

|  |  |  |
| --- | --- | --- |
| **Hexadecimal** | **Show Work…** | **Decimal** |
| 0xA3E | **10(256) + 3(16) + 14** | **21** |
| 0x15 |  |  |
| 0x2A |  |  |
| 0xCC |  |  |
| 0xBAD |  |  |
| 0xF23C |  |  |

2. Convert each of these decimal numbers into hexadecimal. Show your work as in the example.

|  |  |  |
| --- | --- | --- |
| **Decimal** | **Show Work…** | **Hexadecimal** |
| 255 | **15(16) + 15** | **0xFF** |
| 192 |  |  |
| 65 |  |  |
| 1609 |  |  |
| 2024 |  |  |
| 123456 |  |  |

3. Explain how *signed integers* (whole numbers that can be positive, negative, or zero) are encoded in binary. (You may need to do a web search to answer this question.)

Answer

4. Explain how *floating-point* numbers (numbers that are not integers) are encoded in binary. (You may need to do a web search to answer this question.)

Answer