Week 2 – Numeric assignment

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**Class:**

**Student numbers:**

**Student names:**

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# Section A – Positive numbers

In this assignment you will work with Binary, Decimal and Hexadecimal numbers. Make the calculations using only pen and paper, it will be a good practice for you to improve your calculation speed by mind.

*Exercise 1*

Convert the given binary numbers to their decimal equivalent.

|  |  |
| --- | --- |
| **Binary** | **Decimal** |
| **10110010** |  |
| **11101101** |  |
| **10010110** |  |
| **01010101** |  |
| **10000101** |  |

*Exercise 2*

Convert the given decimal numbers to their binary equivalent.

|  |  |
| --- | --- |
| **Decimal** | **Binary** |
| **120** |  |
| **42** |  |
| **35** |  |
| **254** |  |
| **192** |  |

*Exercise 3*

Calculate the following sums in binary and give the resulting number in decimal.

|  |  |  |
| --- | --- | --- |
| **Calculation** | **Binary result** | **Decimal result** |
| **00000101 + 00000011** |  |  |
| **00001101 + 00011000** |  |  |
| **00110011 + 01010101** |  |  |
| **11100111 + 00100001** |  |  |
| **11001001 + 01011011** |  |  |

*Exercise 4*

Given are values in binary, decimal and hexadecimal, complete the table from left to right.

|  |  |  |
| --- | --- | --- |
| **Binary** | **Decimal** | **Hexadecimal** |
| **01110011** |  |  |
|  | **16** |  |
|  |  | **F7** |
| **01000001** |  |  |
|  | **17** |  |
|  |  | **EC** |

# Section B – Negative numbers

*This section must be answered next week.*

*Exercise 1*

Convert the given binary numbers to their decimal equivalent.

|  |  |
| --- | --- |
| **Signed - Binary** | **Decimal** |
| **10110010** |  |
|  | **94** |
| **10010110** |  |
|  | **-124** |
| **10000101** |  |
|  | **-73** |
| **01101100** |  |