COMP-1047-30

Computer Concepts for End-Users

School of Computer Science - University of Windsor

(10%)

**Conversion Assignment**

Complete the following number conversion questions using the sample question provided for each section. Show all work for full marks. **(Q1-Q4 - 3 marks each; Q5-Q6 - 2 marks each)** **/80**

1. Convert the following **binary numbers to decimal numbers** using the sample method provided below:

100010002 /15

Begin by writing the number from right to left down the first column. Then calculate each line.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Number** |  | **Power** | |  |  | **Calculation** | | |  | **Result** |
| **0** | X | 2 | 0 | = |  | **0** | X | **1** | = | **0** |
| **0** | X | 2 | 1 | = |  | **0** | X | **2** | = | **0** |
| **0** | X | 2 | 2 | = |  | **0** | X | **4** | = | **0** |
| **1** | X | 2 | 3 | = |  | **1** | X | **8** | = | **8** |
| **0** | X | 2 | 4 | = |  | **0** | X | **16** | = | **0** |
| **0** | X | 2 | 5 | = |  | **0** | X | **32** | = | **0** |
| **0** | X | 2 | 6 | = |  | **0** | X | **64** | = | **0** |
| **1** | X | 2 | 7 | = |  | **1** | X | **128** | = | **128** |
| Total | | | | | | | | | | **13610** |

* 1. 101010102

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **0** | X | 2 | 0 | = |  | **0** | X | **1** | = | **0** |
| **1** | X | 2 | 1 | = |  | **1** | X | **2** | = | **2** |
| **0** | X | 2 | 2 | = |  | **0** | X | **4** | = | **0** |
| **1** | X | 2 | 3 | = |  | **1** | X | **8** | = | **8** |
| **0** | X | 2 | 4 | = |  | **0** | X | **16** | = | **0** |
| **1** | X | 2 | 5 | = |  | **1** | X | **32** | = | **32** |
| **0** | X | 2 | 6 | = |  | **0** | X | **64** | = | **0** |
| **1** | X | 2 | 7 | = |  | **1** | X | **128** | = | **128** |
| Total | | | | | | | | | | 17010 |

* 1. 100000012

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1** | X | 2 | 0 | = |  | **1** | X | **1** | = | **1** |
| **0** | X | 2 | 1 | = |  | **0** | X | **2** | = | **0** |
| **0** | X | 2 | 2 | = |  | **0** | X | **4** | = | **0** |
| **0** | X | 2 | 3 | = |  | **0** | X | **8** | = | **0** |
| **0** | X | 2 | 4 | = |  | **0** | X | **16** | = | **0** |
| **0** | X | 2 | 5 | = |  | **0** | X | **32** | = | **0** |
| **0** | X | 2 | 6 | = |  | **0** | X | **64** | = | **0** |
| **1** | X | 2 | 7 | = |  | **1** | X | **128** | = | **128** |
| Total | | | | | | | | | | 12910 |

* 1. 101010002

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **0** | X | 2 | 0 | = |  | **0** | X | **1** | = | **0** |
| **0** | X | 2 | 1 | = |  | **0** | X | **2** | = | **0** |
| **0** | X | 2 | 2 | = |  | **0** | X | **4** | = | **0** |
| **1** | X | 2 | 3 | = |  | **1** | X | **8** | = | **8** |
| **0** | X | 2 | 4 | = |  | **0** | X | **16** | = | **0** |
| **1** | X | 2 | 5 | = |  | **1** | X | **32** | = | **32** |
| **0** | X | 2 | 6 | = |  | **0** | X | **64** | = | **0** |
| **1** | X | 2 | 7 | = |  | **1** | X | **128** | = | **128** |
| Total | | | | | | | | | | **16810** |

* 1. 111111102

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **0** | X | 2 | 0 | = |  | **0** | X | **1** | = | **0** |
| **1** | X | 2 | 1 | = |  | **1** | X | **2** | = | **2** |
| **1** | X | 2 | 2 | = |  | **1** | X | **4** | = | **4** |
| **1** | X | 2 | 3 | = |  | **1** | X | **8** | = | **8** |
| **1** | X | 2 | 4 | = |  | **1** | X | **16** | = | **16** |
| **1** | X | 2 | 5 | = |  | **1** | X | **32** | = | **32** |
| **1** | X | 2 | 6 | = |  | **1** | X | **64** | = | **64** |
| **1** | X | 2 | 7 | = |  | **1** | X | **128** | = | **128** |
| Total | | | | | | | | | | 25410 |

* 1. 110011012

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1** | X | 2 | 0 | = |  | **1** | X | **1** | = | **1** |
| **0** | X | 2 | 1 | = |  | **0** | X | **2** | = | **0** |
| **1** | X | 2 | 2 | = |  | **1** | X | **4** | = | **4** |
| **1** | X | 2 | 3 | = |  | **1** | X | **8** | = | **8** |
| **0** | X | 2 | 4 | = |  | **0** | X | **16** | = | **0** |
| **0** | X | 2 | 5 | = |  | **0** | X | **32** | = | **0** |
| **1** | X | 2 | 6 | = |  | **1** | X | **64** | = | **64** |
| **1** | X | 2 | 7 | = |  | **1** | X | **128** | = | **128** |
| Total | | | | | | | | | | 20510 |

1. Convert the following **decimal numbers to binary numbers** using the sample method provided below:

25610 /15

Write down the number and continuously divide by 2. Write down the remainder (the most important part as it will be the binary number.)

Record the remainder numbers from the bottom to the top.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **256** | / | 2 | = | **128** | R | **0** | **Note:** The left-most numbers in the answer don’t need to be written as zeros but grouping it in 4s like this makes it look better and is easier to understand. |
| **128** | / | 2 | = | **64** | R | **0** |
| **64** | / | 2 | = | **32** | R | **0** |
| **32** | / | 2 | = | **16** | R | **0** |
| **16** | / | 2 | = | **8** | R | **0** |
| **8** | / | 2 | = | **4** | R | **0** |
| **4** | / | 2 | = | **2** | R | **0** |
| **2** | / | 2 | = | **1** | R | **0** |
| **1** | / | 2 | = | **0** | R | **1** |
|  |  |  |  | Answer |  | = | **0001 0000 00002** |

* 1. 12210

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **122** | / | 2 | = | **61** | R | **0** |  |
| **61** | / | 2 | = | **30** | R | **1** |
| **30** | / | 2 | = | **15** | R | **0** |
| **15** | / | 2 | = | **7** | R | **1** |
| **7** | / | 2 | = | **3** | R | **1** |
| **3** | / | 2 | = | **1** | R | **1** |
| **1** | / | 2 | = | 0 | R | **1** |  |
|  |  |  |  | Answer |  | = | 0111 10102 |

* 1. 3210

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **32** | / | 2 | = | **16** | R | **0** |  |
| **16** | / | 2 | = | **8** | R | **0** |
| **8** | / | 2 | = | **4** | R | **0** |
| **4** | / | 2 | = | **2** | R | **0** |
| **2** | / | 2 | = | **1** | R | **0** |
| **1** | / | 2 | = | **0** | R | **1** |
|  |  |  |  |  |  |  |  |
|  |  |  |  | Answer |  | = | 0010 00002 |

* 1. 204110

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **2041** | / | 2 | = | **1020** | R | **1** |  |
| **1020** | / | 2 | = | **510** | R | **0** |
| **510** | / | 2 | = | **255** | R | **0** |
| **255** | / | 2 | = | **127** | R | **1** |
| **127** | / | 2 | = | **63** | R | **1** |
| **63** | / | 2 | = | **31** | R | **1** |
| **31** | / | 2 | = | **15** | R | **1** |
| **15** | / | 2 | = | **7** | R | **1** |
| **7** | / | 2 | = | **3** | R | **1** |
| **3** | / | 2 | = | **1** | R | **1** |
| **1** | / | 2 | = | **0** | R | **1** |
|  |  |  |  | Answer |  |  | 0111 1111 10012 |

* 1. 53910

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **539** | / | 2 | = | **269** | R | **1** |  |
| **269** | / | 2 | = | **134** | R | **1** |
| **134** | / | 2 | = | **67** | R | **0** |
| **67** | / | 2 | = | **33** | R | **1** |
| **33** | / | 2 | = | **16** | R | **1** |
| **16** | / | 2 | = | **8** | R | **0** |
| **8** | / | 2 | = | **4** | R | **0** |
| **4** | / | 2 | = | **2** | R | **0** |
| **2** | / | 2 | = | **1** | R | **0** |
| **1** | / | 2 | = | **0** | R | **1** |
|  |  |  |  | Answer |  |  | 0010 0001 10112 |

* 1. 27810

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **278** | / | 2 | = | **139** | R | **0** |  |
| **139** | / | 2 | = | **69** | R | **1** |
| **69** | / | 2 | = | **34** | R | **1** |
| **34** | / | 2 | = | **17** | R | **0** |
| **17** | / | 2 | = | **8** | R | **1** |
| **8** | / | 2 | = | **4** | R | **0** |
| **4** | / | 2 | = | **2** | R | **0** |
| **2** | / | 2 | = | **1** | R | **0** |
| **1** | / | 2 | = | **0** | R | **1** |
|  |  |  |  | Answer |  |  | 0001 0001 01102 |

1. Convert the following **decimal numbers to hexadecimal numbers** using the sample method provided:

45410 /15

Write down the number and continuously divide by 16. Write down the remainder (the most important part) and multiply it by 16, then write it down. Note: When the decimal number is greater than 9 convert the number to its hexadecimal not the decimal number.

Record the number from the bottom to the top.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Numerator** |  | **Divisor** |  | **Result** |  | **Remainder** | **Showing Decimal Remainder Calculation**   * Remainder converted (1 mark) |
| **454** | / | 16 | = | **28** | R | **6** | **.375x16=6** |
| **28** | / | 16 | = | **1** | R | **C** | **.75x16=12** |
| **1** | / | 16 | = | **0** | R | **1** |  |
|  | / | 16 | = |  | R |  |  |
|  | / | 16 | = |  | R |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  | Answer |  | = | **1C616** |

* 1. 3310

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **33** | / | 16 | = | **2** | R | **1** | **.0x16=0** |
| **2** | / | 16 | = | **1** | R | **2** | **.125x16=2** |
|  | / |  | = |  | R |  |  |
|  | / |  | = |  | R |  |  |
|  | / |  | = |  | R |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  | Answer |  | = | 2116 |

* 1. 2510

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **25** | / | 16 | = | **1** | R | **9** |  |
|  | / |  | = |  | R |  |  |
|  | / |  | = |  | R |  |  |
|  | / |  | = |  | R |  |  |
|  | / |  | = |  | R |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  | Answer |  | = | 1916 |

* 1. 25410

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **254** | / | 16 | = | **15** | R | **E** | **.875x16=14** |
| **15** | / | 16 | = | **0** | R | **F** | **15** |
|  | / |  | = |  | R |  |  |
|  | / |  | = |  | R |  |  |
|  | / |  | = |  | R |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  | Answer |  | = | FE16 |

* 1. 1810

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **18** | / | 16 | = | **1** | R | **2** |  |
|  | / |  | = |  | R |  |  |
|  | / |  | = |  | R |  |  |
|  | / |  | = |  | R |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  | Answer |  | = | 1216 |

* 1. 134310

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **1343** | / | 16 | = | **83** | R | **F** | **.9375x16=15** |
| **83** | / | 16 | = | **5** | R | **3** | **.1875x16=3** |
| **5** | / | 16 | = | **0** | R | **5** |  |
|  | / |  | = |  | R |  |  |
|  | / |  | = |  | R |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  | Answer |  | = | 53F16 |

1. Convert the following **hexadecimal numbers to decimal numbers** using the sample method provided:

ACE16 /15

Begin by writing the number from right to left down the first column. Then calculate each line and add the result.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Number** |  | **Power** |  |  |  | **Decimal** |  | **Power** |  | **Result** |
| **E** | X | 16 | 0 | = | **E** | 14 | X | **1** | = | **14** |
| **C** | X | 16 | 1 | = | **C** | 12 | X | **16** | = | **192** |
| **A** | X | 16 | 2 | = | **A** | 10 | X | **256** | = | **2560** |
|  | X | 16 | 3 | = |  |  | X | **4096** | = |  |
| Total | | | | | | | | | | **276610** |

* 1. 2016

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **0** | X | 16 | 0 | = | **0** |  | X | **1** | = | **0** |
| **2** | X | 16 | 1 | = | **2** |  | X | **16** | = | **32** |
|  | X |  | 2 | = |  |  | X |  | = |  |
| Total | | | | | | | | | | 3210 |

* 1. FAD16

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **D** | X | 16 | 0 | = | **13** | 1 | X | **13** | = | **13** |
| **A** | X | 16 | 1 | = | **10** | 16 | X | **10** | = | **160** |
| **F** | X | 16 | 2 | = | **15** | 256 | X | **15** | = | **3840** |
|  | X |  | 3 | = |  |  | X |  | = |  |
| Total | | | | | | | | | | 401310 |

* 1. 109816

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **8** | X | 16 | 0 | = |  | 1 | X | **8** | = | **8** |
| **9** | X | 16 | 1 | = |  | 16 | X | **9** | = | **144** |
| **0** | X | 16 | 2 | = |  | 256 | X | **0** | = | **0** |
| **1** | X | 16 | 3 | = |  | 4096 | X | **1** | = | **4096** |
| Total | | | | | | | | | | 424810 |

* 1. 7616

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **6** | X | 16 | 0 | = |  | 1 | X | **6** | = | **6** |
| **7** | X | 16 | 1 | = |  | 16 | X | **7** | = | **112** |
|  | X |  | 2 | = |  |  | X |  | = |  |
|  | X |  | 3 | = |  |  | X |  | = |  |
| Total | | | | | | | | | | 11810 |

* 1. C916

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **9** | X | 16 | 0 | = |  | 1 | X | **9** | = | **9** |
| **C** | X | 16 | 1 | = | **12** | 16 | X | **12** | = | **192** |
|  | X |  | 2 | = |  |  | X |  | = |  |
|  | X |  | 3 | = |  |  | X |  | = |  |
| Total | | | | | | | | | | 20110 |

1. Convert the following **binary numbers to hexadecimal numbers** using the sample method provided below to help you: /10

110000012

Write the number in the 2nd row. Notice the separation line between the numbers. Write the 1st 4 bits in the binary number from right to left down the 1st column. Multiple each binary number by the decimal number in row 1 and add them up. Convert the answer when it is over 9 to the hexadecimal number in each section. Repeat the steps for the2nd 4 bits of the binary number. Put them together to get the hexadecimal number.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 4 | 2 | 1 | 8 | 4 | 2 | 1 |  |  |  |
| **1** | **1** | **0** | **0** | **0** | **0** | **0** | **1** |  |  |  |
| = |  |  |  | = |  |  |  |  |  |  |
| **0** | X | 1 | **0** | 1 | X | 1 | 1 |  |  |  |
| **0** | X | 2 | **0** | 0 | X | 2 | 0 |  |  |  |
| **1** | X | 4 | **4** | 0 | X | 4 | 0 |  |  |  |
| **1** | X | 8 | **8** | 0 | X | 8 | 0 |  |  | |
| **Total = 12** | | | | **Total = 1** | | | |  |  | |
| **Since 12**10**=C**16 | | | **C** | Since 110=116 | | | 1 | = | **C11**6 | |

* 1. 101111102

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 4 | 2 | 1 | 8 | 4 | 2 | 1 |  |  |  |
| **1** | **0** | **1** | **1** | **1** | **1** | **1** | **0** |  |  |  |
| = |  |  |  | = |  |  |  |  |  |  |
| **8** | X | 1 | **8** | **8** | X | 1 | **8** |  |  |  |
| **4** | X | 0 | **0** | **4** | X | 1 | **4** |  |  |  |
| **2** | X | 1 | **2** | **2** | X | 1 | **2** |  |  |  |
| **1** | X | 1 | **1** | **1** | X | 0 | **0** |  |  | |
| Total=11 | | | | Total=14 | | | |  |  | |
| Since 112=B16 | | | B | Since 142=E16 | | | E | = | BE16 | |

* 1. 101010102

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 4 | 2 | 1 | 8 | 4 | 2 | 1 |  |  |  |
| **1** | **0** | **1** | **0** | **1** | **0** | **1** | **0** |  |  |  |
| = |  |  |  | = |  |  |  |  |  |  |
| **8** | X | 1 | **8** | **8** | X | 1 | **8** |  |  |  |
| **4** | X | 0 | **0** | **4** | X | 0 | **0** |  |  |  |
| **2** | X | 1 | **2** | **2** | X | 1 | **2** |  |  |  |
| **1** | X | 0 | **0** | **1** | X | 0 | **0** |  |  | |
| Total=10 | | | | Total=10 | | | |  |  | |
| Since 102=A16 | | |  | Since 102=A16 | | |  | = | AA16 | |

* 1. 001011002

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 4 | 2 | 1 | 8 | 4 | 2 | 1 | |  |  |  |
| **0** | **0** | **1** | **0** | **1** | **1** | **0** | **0** | |  |  |  |
| = |  |  |  | = |  |  |  | |  |  |  |
| **8** | X | 0 | **0** | **8** | X | 1 | **8** | |  |  |  |
| **4** | X | 0 | **0** | **4** | X | 1 | **4** | |  |  |  |
| **2** | X | 1 | **2** | **2** | X | 0 | **0** | |  |  |  |
| **1** | X | 0 | **0** | **1** | X | 0 | **0** | |  |  | |
| **Total=2** | | | | **Total=12** | | | | |  |  | |
| Since 22=216 | | |  | Since 122=C16 | | | |  | = | 2C16 | |

* 1. 100111012

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 4 | 2 | 1 | 8 | 4 | 2 | 1 |  |  |  |
| **1** | **0** | **0** | **1** | **1** | **1** | **0** | **1** |  |  |  |
| = |  |  |  | = |  |  |  |  |  |  |
| 8 | X | 1 | **8** | 8 | X | 1 | **8** |  |  |  |
| 4 | X | 0 | **0** | 4 | X | 1 | **4** |  |  |  |
| 2 | X | 0 | **0** | 2 | X | 0 | **0** |  |  |  |
| 1 | X | 1 | **1** | 1 | X | 1 | **1** |  |  | |
| Total=9 | | | | Total=13 | | | |  |  | |
| Since 92=916 | | |  | Since 132=D16 | | |  | = | 9D16 | |

* 1. 000011112

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 4 | 2 | 1 | 8 | 4 | 2 | 1 |  |  |  |
| **0** | **0** | **0** | **0** | **1** | **1** | **1** | **1** |  |  |  |
| = |  |  |  | = |  |  |  |  |  |  |
| 8 | X | 0 | **0** | 8 | X | 1 | **8** |  |  |  |
| 4 | X | 0 | **0** | 4 | X | 1 | **4** |  |  |  |
| 2 | X | 0 | **0** | 2 | X | 1 | **2** |  |  |  |
| 1 | X | 0 | **0** | 1 | X | 1 | **1** |  |  | |
| Total=0 | | | | Total=15 | | | |  |  | |
| Since 02=016 | | |  | Since 152=F16 | | |  | = | F16 | |

1. Convert the following **hexadecimal numbers to binary numbers** using the sample method provided:

/10

A1C16

Separate each hexadecimal digit into the 4 binary sections and write the binary number equivalent above it. Write out the number continuously from left to right.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  | **A** |  |  |  | **1** |  |  |  | **C** |  |  |
|  |  |  |  | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | = | **1010 0001 11002** |

1. FACE16

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | **F** |  |  |  | **A** |  |  |  | **C** |  |  |  | **E** |  |  |
| 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | = | **1111 1010 1100 11102** |

1. A416

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  | **A** |  |  |  | **4** |  |  |
|  |  |  |  |  |  |  |  | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | = | **1010 01002** |

1. FEED16

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | **F** |  |  |  | **E** |  |  |  | **E** |  |  |  | **D** |  |  |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | = | **1111 1110 1110 11012** |

1. FAB216

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | **F** |  |  |  | **A** |  |  |  | **B** |  |  |  | **2** |  |  |
| 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | = | **1111 1010 1011 00102** |

1. B416

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  | **B** |  |  |  | **4** |  |  |
|  |  |  |  |  |  |  |  | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | = | **1011 01002** |