

**Worksheet**

**Converting Binary to Decimal**

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**Transistors:**

* The computer’s microprocessor is a small component made up of millions of tiny electrical switches.
* Transistors can be only either **On or Off**



* A computer stores and processes data in a simple format because it only understands these two states On **and Off**



**Binary system:**

* The binary number system only uses zero and one to represent data.

 **Byte:**

* Byte is the basic word that a computer uses.
* A byte is eight bits’ long

**Measuring computer memory:**



Write each binary number as a decimal number:

|  |  |
| --- | --- |
| 1- Binary = (10011) 2 Decimal = 194 3 2 1 02 2 2 2 21 0 0 1 1 =2x2x2x2= 162x1= 2116+2+1=19 | 2- Binary = (10000) 2 Decimal = 164 3 2 1 02 2 2 2 2 1 0 0 0 02x2x2x2=16 |
| 3- Binary = (101011) 2 Decimal =435 4 3 2 1 02 2 2 2 2 21 0 1 0 1 12x2x2x2x2=322x2x2=82132+8+2+1=43 | 4- Binary = (1111) 2 Decimal = 153 2 1 02 2 2 21 1 1 12x2x2=82x2=421 8+4+2+1=15 |
| 5- Binary = (110011) 2 Decimal=515 4 3 2 1 0 2 2 2 2 2 21 1 0 0 1 12x2x2x2x2=322x2x2x2=1621  32+16+2+1=51  | 6-Binary = (11000) 2 Decimal = 204 3 2 1 02 2 2 2 21 1 0 0 02x2x2x2=162x2x2=816+8 = 20 |