

**ALL CALCULATIONS MUST BE SHOWN!**

**The space shown every four bits is for readability only.**

**Show all leading zeros.**

<p>1. Binary = 1001 Decimal = 9</p> $= (1 \times 2^0) + (0 \times 2^1) + (0 \times 2^2) + (1 \times 2^3)$ $= 1 + 0 + 0 + 8$ $= 9$	<p>2. Binary = 1011 Decimal = 11</p> $= (1 \times 2^0) + (1 \times 2^1) + (0 \times 2^2) + (1 \times 2^3)$ $= 1 + 2 + 0 + 8$ $= 11$
<p>3. Binary = 0101 Decimal = 5</p> $= (1 \times 2^0) + (0 \times 2^1) + (1 \times 2^2) + (0 \times 2^3)$ $= 1 + 0 + 4 + 0$ $= 5$	<p>4. Binary = 0111 Decimal = 7</p> $= (1 \times 2^0) + (1 \times 2^1) + (1 \times 2^2) + (0 \times 2^3)$ $= 1 + 2 + 4 + 0$ $= 7$
<p>5. Binary = 1111 1111 Decimal = 255</p> $= (1 \times 2^0) + (1 \times 2^1) + (0 \times 2^2) + (1 \times 2^3) + (1 \times 2^4) + (1 \times 2^5) + (0 \times 2^6) + (1 \times 2^7)$ $= 1 + 2 + 4 + 8 + 16 + 32 + 64 + 128$ $= 255$	<p>6. Binary = 1101 0001 Decimal = 209</p> $= (1 \times 2^0) + (0 \times 2^1) + (0 \times 2^2) + (0 \times 2^3) + (1 \times 2^4) + (0 \times 2^5) + (1 \times 2^6) + (1 \times 2^7)$ $= 1 + 0 + 0 + 0 + 16 + 0 + 64 + 128$ $= 209$
<p>7. Binary = 0001 0011 Decimal = 19</p> $= (1 \times 2^0) + (1 \times 2^1) + (0 \times 2^2) + (0 \times 2^3) + (1 \times 2^4) + (0 \times 2^5) + (0 \times 2^6) + (0 \times 2^7)$ $= 1 + 2 + 0 + 0 + 16 + 0 + 0 + 0$ $= 19$	<p>8. Binary = 0101 0010 Decimal = 82</p> $= (0 \times 2^0) + (1 \times 2^1) + (0 \times 2^2) + (0 \times 2^3) + (1 \times 2^4) + (0 \times 2^5) + (1 \times 2^6) + (0 \times 2^7)$ $= 0 + 2 + 0 + 0 + 16 + 0 + 64 + 0$ $= 82$
<p>9. Binary = 0001 0110 Decimal = 22</p> $= (0 \times 2^0) + (1 \times 2^1) + (1 \times 2^2) + (0 \times 2^3) + (1 \times 2^4) + (0 \times 2^5) + (0 \times 2^6) + (0 \times 2^7)$ $= 0 + 2 + 4 + 0 + 16 + 0 + 0 + 0$ $= 22$	<p>10. Binary = 0001 1100 Decimal = 28</p> $= (0 \times 2^0) + (0 \times 2^1) + (1 \times 2^2) + (1 \times 2^3) + (1 \times 2^4) + (0 \times 2^5) + (0 \times 2^6) + (0 \times 2^7)$ $= 0 + 0 + 4 + 8 + 16 + 0 + 0 + 0$ $= 28$