Primera sección

1. Utilice el procedimiento visto en clase para la conversión de los siguientes números decimales a binarios:
   1. 7:
      1. 7÷2=3 residuo **1**
      2. 3÷2=1 residuo **1**
      3. 1÷2=0 residuo **1**
      4. **111**
   2. 45:
      1. 45÷2=22, residuo **1**
      2. 22÷2=11, residuo **0**
      3. 11÷2=5, residuo **1**
      4. 5÷2=2, residuo **1**
      5. 2÷2=1, residuo **0**
      6. 1÷2=0, residuo **1**
      7. **101101**
   3. 123:
      1. 123÷2=61, residuo **1**
      2. 61÷2=30, residuo **1**
      3. 30÷2=15, residuo **0**
      4. 15÷2=7, residuo **1**
      5. 7÷2=3, residuo **1**
      6. 3÷2=1, residuo **1**
      7. 1÷2=0, residuo **1**
      8. **1111011**
   4. 8.75:
      1. 8÷2=4, residuo **0**
      2. 4÷2=2, residuo **0**
      3. 2÷2=1, residuo **0**
      4. 1÷2=0, residuo **1**
      5. 1000
      6. 0.75×2=1.5, parte entera 1
      7. 0.5×2=1.0, parte entera 1
      8. **1000.11**
   5. -18:
      1. 18÷2=9, residuo **0**
      2. 9÷2=4, residuo **1**
      3. 4÷2=2, residuo **0**
      4. 2÷2=1, residuo **0**
      5. 1÷2=0, residuo **1**
      6. **Se invierten los bits del número positivo:**
      7. **11101101**
      8. 11101101 + 1 = **11101110**
2. Realice las tablas de verdad de las siguientes operaciones de lógica booleana, ver un ejemplo en anexos:
   1. A ^ B

|  |  |  |
| --- | --- | --- |
| A | B | A ∧ B |
| V | V | V |
| V | F | F |
| F | V | F |
| F | F | F |

* 1. (¬A ^ B) v C

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| A | B | C | ¬A | ¬A ^ B | (¬A ^ B) v C |
| V | V | V | F | F | V |
| V | V | F | F | F | F |
| V | F | V | F | F | V |
| V | F | F | F | F | F |
| F | V | V | V | V | V |
| F | V | F | V | V | V |
| F | F | V | V | F | V |
| F | F | F | V | F | F |

* 1. ¬(A v C) ^B

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| A | B | C | A v C | ¬(A v C) | ¬(A v C) ^B |
| V | V | V | V | F | F |
| V | V | F | V | F | F |
| V | F | V | V | F | F |
| V | F | F | V | F | F |
| F | V | V | V | F | F |
| F | V | F | F | V | V |
| F | F | V | V | F | F |
| F | F | F | F | V | F |

* 1. (B ^ C)^(¬A)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| A | B | C | ¬A | B ^ C | (B^C)^(¬A) |
| V | V | V | F | V | F |
| V | V | F | F | F | F |
| V | F | V | F | F | F |
| V | F | F | F | F | F |
| F | V | V | V | V | V |
| F | V | F | V | F | F |
| F | F | V | V | F | F |
| F | F | F | V | F | F |

* 1. (M ^ (¬A)) v (¬C)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| A | M | C | ¬A | ¬C | M ^ (¬A) | (M^(¬A))v(¬C) |
| V | V | V | F | F | F | F |
| V | V | F | F | V | F | V |
| V | F | V | F | F | F | F |
| V | F | F | F | V | F | V |
| F | V | V | V | F | V | V |
| F | V | F | V | V | V | V |
| F | F | V | V | F | F | F |
| F | F | F | V | V | F | V |