1- Convert number (24) from decimal to binary

حول رقم ( 24 ) من decimal إلى binary

Solution

Divide by the base 2 to get the digits from the remainders:

| Division by 2 | Quotient | Remainder (Digit) | Bit # |
|---|---|---|---|
| (24)/2 | 12 | 0 | 0 |
| (12)/2 | 6 | 0 | 1 |
| (6)/2 | 3 | 0 | 2 |
| (3)/2 | 1 | 1 | 3 |
| (1)/2 | 0 | 1 | 4 |

$= (11000)_2$

2- Convert the number (30) from decimal to binary

حول رقم ( 30 ) من decimal إلى binary

Solution

Divide by the base 2 to get the digits from the remainders:

| Division by 2 | Quotient | Remainder (Digit) | Bit # |
|---|---|---|---|
| (30)/2 | 15 | 0 | 0 |
| (15)/2 | 7 | 1 | 1 |
| (7)/2 | 3 | 1 | 2 |
| (3)/2 | 1 | 1 | 3 |
| (1)/2 | 0 | 1 | 4 |

$= (11110)_2$

---

3- Convert the number (12) from decimal to binary

حول رقم ( 12 ) من decimal إلى binary

Solution

Divide by the base 2 to get the digits from the remainders:

| Division by 2 | Quotient | Remainder (Digit) | Bit # |
|---|---|---|---|
| (12)/2 | 6 | 0 | 0 |
| (6)/2 | 3 | 0 | 1 |
| (3)/2 | 1 | 1 | 2 |
| (1)/2 | 0 | 1 | 3 |

$= (1100)_2$

---

4- Convert number (24) from decimal to octal

حول رقم ( 24 ) من decimal إلى octal

Solution

Divide by the base 8 to get the digits from the remainders:

| Division by 8 | Quotient | Remainder (Digit) | Digit # |
|---|---|---|---|
| (24)/8 | 3 | 0 | 0 |
| (3)/8 | 0 | 3 | 1 |

$= (30)_8$

---

5- Convert the number (30) from decimal to octal

حول رقم ( 30 ) من decimal إلى octal

Solution

Divide by the base 8 to get the digits from the remainders:

| Division by 8 | Quotient | Remainder (Digit) | Digit # |
|---|---|---|---|
| (30)/8 | 3 | 6 | 0 |
| (3)/8 | 0 | 3 | 1 |

$= (36)_8$

---

6- Convert the number (12) from decimal to octal

حول رقم ( 12 ) من decimal إلى octal

Solution

Divide by the base 8 to get the digits from the remainders:

| Division by 8 | Quotient | Remainder (Digit) | Digit # |
|---|---|---|---|
| (12)/8 | 1 | 4 | 0 |
| (1)/8 | 0 | 1 | 1 |

$= (14)_8$

---

7- Convert the number (24) from decimal to hexadecimal

حول رقم ( 24 ) من decimal إلى hexadecimal

Solution

Divide by the base 16 to get the digits from the remainders:

| Division by 16 | Quotient | Remainder (Digit) | Digit # |
|---|---|---|---|
| (24)/16 | 1 | 8 | 0 |
| (1)/16 | 0 | 1 | 1 |

$= (18)_{16}$

---

8- Convert the number (30) from decimal to hexadecimal

حول رقم ( 30 ) من decimal إلى hexadecimal

Solution

Divide by the base 16 to get the digits from the remainders:

| Division by 16 | Quotient | Remainder (Digit) | Digit # |
|---|---|---|---|
| (30)/16 | 1 | 14 | 0 |
| (1)/16 | 0 | 1 | 1 |

$= (1E)_{16}$

---

9- Convert the number (12) from decimal to hexadecimal

حول رقم ( 12 ) من decimal إلى hexadecimal

Solution

Divide by the base 16 to get the digits from the remainders:

| Division by 16 | Quotient | Remainder (Digit) | Digit # |
|---|---|---|---|
| (12)/16 | 0 | 12 | 0 |

$= (C)_{16}$

---

10- Convert the number (123789) from decimal to hexadecimal

تحويل الرقم (123789) من decimal الى النظام hexadecimal

Solution

Divide by the base 16 to get the digits from the remainders:

| Division by 16 | Quotient | Remainder (Digit) | Digit # |
|---|---|---|---|
| (123789)/16 | 7736 | 13 | 0 |
| (7736)/16 | 483 | 8 | 1 |
| (483)/16 | 30 | 3 | 2 |
| (30)/16 | 1 | 14 | 3 |
| (1)/16 | 0 | 1 | 4 |

$= (1E38D)_{16}$

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