Binary Number Conversion

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Number Systems:
Binary Numbers

- Express the decimal number **91** as a binary number.

- Express the binary number **110110** as a decimal number.

Converting from Decimal to Binary using the repeated division method.

Number	Division by 2	Quotient	Remainder
91			

Converting from Decimal to Binary using the repeated division method.

Number	Division by 2	Quotient	Remainder
91	**45.5**	**45**	

Converting from Decimal to Binary using the repeated division method.

Number	Division by 2	Quotient	Remainder
91	**45.5**	**45**	**1**

Converting from Decimal to Binary using the repeated division method.

Number	Division by 2	Quotient	Remainder
91	**45.5**	**45**	**1**
45			

Converting from Decimal to Binary using the repeated division method.

Number	Division by 2	Quotient	Remainder
91	45.5	45	1
45	22.5	22	1

Converting from Decimal to Binary using the repeated division method.

Number	Division by 2	Quotient	Remainder
91	45.5	45	1
45	22.5	22	1
22			

Converting from Decimal to Binary using the repeated division method.

Number	Division by 2	Quotient	Remainder
91	45.5	45	1
45	22.5	22	1
22	11	11	0

Converting from Decimal to Binary using the repeated division method.

Number	Division by 2	Quotient	Remainder
91	45.5	45	1
45	22.5	22	1
22	11	11	0
11			

Converting from Decimal to Binary using the repeated division method.

Number	Division by 2	Quotient	Remainder
91	45.5	45	1
45	22.5	22	1
22	11	11	0
11	5.5	5	1

Converting from Decimal to Binary using the repeated division method.

Number	Division by 2	Quotient	Remainder
91	45.5	45	1
45	22.5	22	1
22	11	11	0
11	5.5	5	1
5	2.5	2	1

Converting from Decimal to Binary using the repeated division method.

Number	Division by 2	Quotient	Remainder
91	45.5	45	1
45	22.5	22	1
22	11	11	0
11	5.5	5	1
5	2.5	2	1
2	1	1	0

Converting from Decimal to Binary using the repeated division method.

Number	Division by 2	Quotient	Remainder
91	45.5	45	1
45	22.5	22	1
22	11	11	0
11	5.5	5	1
5	2.5	2	1
2	1	1	0
1	0.5	0	1

Converting from Decimal to Binary using the repeated division method.

Number	Division by 2	Quotient	Remainder
91	45.5	45	1
45	22.5	22	1
22	11	11	0
11	5.5	5	1
5	2.5	2	1
2	1	1	0
1	0.5	0	1
		(Finished)	

Converting from Decimal to Binary using the repeated division method.

Number	Division by 2	Quotient	Remainder
91	45.5	45	1
45	22.5	22	1
22	11	11	0
11	5.5	5	1
5	2.5	2	1
2	1	1	0
1	0.5	0	1
		ANSWER	1011011

Binary Numbers

- Express the decimal number **4591** as a binary number.
  - Correct Answer: **1011011**

- Express the binary number **110110** as a decimal number.

Converting from Binary to Decimal.
(**110110**)

Bit	Power	Weighting	Product
0	**0**	$2^0=1$	
1	**1**	$2^1=2$	
1	**2**	$2^2=4$	
0	**3**	$2^3=8$	
1	**4**	$2^4=16$	
1	**5**	$2^5=32$	

Converting from Binary to Decimal.
(**110110**)

Bit	Power	Weighting	Product
0	*0*	**1**	
1	*1*	**2**	
1	*2*	**4**	
0	*3*	**8**	
1	*4*	**16**	
1	*5*	**32**	

Converting from Binary to Decimal.
(**110110**)

Bit	Power	Weighting	Product
0	*0*	**1**	**0**
1	*1*	**2**	
1	*2*	**4**	
0	*3*	**8**	
1	*4*	**16**	
1	*5*	**32**	

Converting from Binary to Decimal.
(**110110**)

Bit	Power	Weighting	Product
0	*0*	**1**	**0**
1	*1*	**2**	**2**
1	*2*	**4**	
0	*3*	**8**	
1	*4*	**16**	
1	*5*	**32**	

Converting from Binary to Decimal.
(**110110**)

Bit	Power	Weighting	Product
0	*0*	**1**	**0**
1	*1*	**2**	**2**
1	*2*	**4**	**4**
0	*3*	**8**	
1	*4*	**16**	
1	*5*	**32**	

Converting from Binary to Decimal.
(**110110**)

Bit	Power	Weighting	Product
0	*0*	**1**	**0**
1	*1*	**2**	**2**
1	*2*	**4**	**4**
0	*3*	**8**	**0**
1	*4*	**16**	
1	*5*	**32**	

Converting from Binary to Decimal.
(**110110**)

Bit	Power	Weighting	Product
0	*0*	**1**	**0**
1	*1*	**2**	**2**
1	*2*	**4**	**4**
0	*3*	**8**	**0**
1	*4*	**16**	**16**
1	*5*	**32**	

Converting from Binary to Decimal.
(**110110**)

Bit	Power	Weighting	Product
0	*0*	**1**	**0**
1	*1*	**2**	**2**
1	*2*	**4**	**4**
0	*3*	**8**	**0**
1	*4*	**16**	**16**
1	*5*	**32**	**32**

Converting from Binary to Decimal.
(**110110**)

Bit	Power	Weighting	Product
0	*0*	**1**	**0**
1	*1*	**2**	**2**
1	*2*	**4**	**4**
0	*3*	**8**	**0**
1	*4*	**16**	**16**
1	*5*	**32**	**32**
		SUM=	

Converting from Binary to Decimal.
(**110110**)

Bit	Power	Weighting	Product
0	*0*	**1**	**0**
1	*1*	**2**	**2**
1	*2*	**4**	**4**
0	*3*	**8**	**0**
1	*4*	**16**	**16**
1	*5*	**32**	**32**
		SUM=	**54**

Binary Numbers

- Express the decimal number **4591** as a binary number.
  - Correct Answer: **1011011**

- Express the binary number **110110** as a decimal number.
  - Correct Answer: **54**