

Binary Numbers Supp. Ex. (1)

Name: _____ ()

1. Convert the following binary numbers to decimal numbers.

(a) $1100_{(2)}$

$$= 8 + 4$$

$$= 12_{(10)} //$$

(b) $10\ 0100_{(2)}$

$$= 32 + 4$$

$$= 36_{(10)} //$$

(c) $100\ 1001_{(2)}$

$$= 64 + 8 + 1$$

$$= 73_{(10)} //$$

(d) $1000\ 1100_{(2)}$

$$= 128 + 8 + 4$$

$$= 140_{(10)} //$$

(e) $1001\ 0011_{(2)}$

$$= 128 + 16 + 2 + 1$$

$$= 147_{(10)} //$$

(f) $1\ 0000\ 0010_{(2)}$

$$= 256 + 2$$

$$= 258_{(10)} //$$

2. Convert the following decimal numbers to binary numbers.

(a) $33_{(10)}$

$$= 100001_{(2)} //$$

(b) $52_{(10)}$

$$= 110100_{(2)} //$$

(c) $64_{(10)}$

$$= 1000000_{(2)} //$$

(d) $78_{(10)}$

$$= 1001110_{(2)} //$$

(e) $83_{(10)}$

$$= 1010011_{(2)} //$$

(f) $102_{(10)}$

$$= 1100110_{(2)} //$$

3. Convert the following hexadecimal numbers to binary numbers.

(a) $AF_{(16)}$

$$1010\ 1111_{(2)}$$

(b) $3F1_{(16)}$

$$11\ 1111\ 0001_{(2)}$$

(c) $44_{(16)}$

$$100\ 0100_{(2)}$$

(d) $B20_{(16)}$

$$1011\ 0010\ 0000_{(2)}$$

(e) $C9A0_{(16)}$

$$1100\ 1001\ 1010\ 0000_{(2)}$$

(f) $20D5_{(16)}$

$$10\ 0000\ 1101\ 0101_{(2)}$$

4. Convert the following binary numbers to hexadecimal numbers.

(a) $100\ 1100_{(2)}$

$$4C_{(16)}$$

(b) $1010\ 0000_{(2)}$

$$A0_{(16)}$$

(c) $1\ 0100\ 0001_{(2)}$

$$141_{(16)}$$

(d) $11\ 0100\ 0100_{(2)}$

$$344_{(16)}$$

(e) $111\ 1001\ 1100_{(2)}$

$$79C_{(16)}$$

(f) $11\ 1000\ 0100\ 0100_{(2)}$

$$3844_{(16)}$$

5. Write down the next 4 consecutive numbers of the following binary numbers.

(a) $1000_{(2)}$

$1001_{(2)}, 1010_{(2)},$

$1011_{(2)}, 1100_{(2)}$

(b) $101110_{(2)}$

$101111_{(2)}, 110000_{(2)}$

$110001_{(2)}, 110010_{(2)}$

(c) $1011111_{(2)}$

$1100000_{(2)}, 1100001_{(2)},$

$1100010_{(2)}, 1100011_{(2)}$

6. Write down the last 4 consecutive numbers of the following binary numbers.

(a) $1111_{(2)}$

$1110_{(2)}, 1101_{(2)}$

$1100_{(2)}, 1011_{(2)}$

(b) $1000_{(2)}$

$111_{(2)}, 110_{(2)},$

$101_{(2)}, 100_{(2)}$

(c) $111000_{(2)}$

$110111_{(2)}, 110110_{(2)},$

$110101_{(2)}, 110100_{(2)}$

7. Write down the next 4 consecutive numbers of the following hexadecimal numbers.

(a) $37_{(16)}$

$38_{(16)}, 39_{(16)},$

$3A_{(16)}, 3B_{(16)}$

(b) $2A8_{(16)}$

$2A9_{(16)}, 2AA_{(16)}$

$2AB_{(16)}, 2AC_{(16)}$

(c) $C8E_{(16)}$

$C8F_{(16)}, C90_{(16)}$

$C91_{(16)}, C92_{(16)}$

(d) $78F_{(16)}$

$790_{(16)}, 791_{(16)}$

$792_{(16)}, 793_{(16)}$

(e) $269E_{(16)}$

$269F_{(16)}, 26A0_{(16)},$

$26A1_{(16)}, 26A2_{(16)}$

(f) $ACCD_{(16)}$

$ACCE_{(16)}, ACCF_{(16)},$

$ACD0_{(16)}, ACD1_{(16)}$

8. Write down the last 4 consecutive numbers of the following hexadecimal numbers.

(a) $59_{(16)}$

$58_{(16)}, 57_{(16)}$

$56_{(16)}, 55_{(16)}$

(b) $8AE_{(16)}$

$8AD_{(16)}, 8AC_{(16)}$

$8AB_{(16)}, 8AA_{(16)}$

(c) $D8B_{(16)}$

$D8A_{(16)}, D89_{(16)}$

$D88_{(16)}, D87_{(16)}$

(d) $A62_{(16)}$

$A61_{(16)}, A60_{(16)}$

$A5F_{(16)}, A5E_{(16)}$

(e) $2AB1_{(16)}$

$2AB0_{(16)}, 2AAF_{(16)}$

$2AAE_{(16)}, 2AAD_{(16)}$

(f) $FA8B_{(16)}$

$FA8A_{(16)}, FA89_{(16)}$

$FA88_{(16)}, FA87_{(16)}$