LEMBAR CARA
TUGAS MANDIRI 2

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①

| | BCD | Excess-3 | 2 4 2 1 | Excess-5 |
|---|---|---|---|---|
| 0 | 0 0 0 0 | 0 0 1 1 | 0 0 0 0 | 0 1 0 1 |
| 1 | 0 0 0 1 | 0 1 0 0 | 0 0 0 1 | 0 1 1 0 |
| 2 | 0 0 1 0 | 0 1 0 1 | 0 0 1 0 | 0 1 1 1 |
| 3 | 0 0 1 1 | 0 1 1 0 | 0 0 1 1 | 1 0 0 0 |
| 4 | 0 1 0 0 | 0 1 1 1 | 0 1 0 0 | 1 0 0 1 |
| 5 | 0 1 0 1 | 1 0 0 0 | 1 0 1 1 | 1 0 1 0 |
| 6 | 0 1 1 0 | 1 0 0 1 | 1 1 0 0 | 1 0 1 1 |
| 7 | 0 1 1 1 | 1 0 1 0 | 1 1 0 1 | 1 1 0 0 |
| 8 | 1 0 0 0 | 1 0 1 1 | 1 1 1 0 | 1 1 0 1 |
| 9 | 1 0 0 1 | 1 1 0 0 | 1 1 1 1 | 1 1 1 0 |

edit:
15 di excess-3
0000 0000 0100 1000

290 di excess-3
0000 0101 1000 0011

15 di excess-5
0000 0000 0110 1010

290 di excess-5
0000 0111 1101 0101

| Decimal | BCD | Excess 3 |
|---|---|---|
| 0 0 1 5 | 0 0 0 0 0 0 0 0<br>0 0 0 1 0 1 0 1 | 0 0 1 1 0 0 1 1<br>0 1 0 0 1 0 0 0 |
| 0 2 9 0 | 0 0 0 0 0 0 1 0<br>1 0 0 1 0 0 0 0 | 0 0 1 1 0 1 0 1<br>1 1 0 0 0 0 1 1 |
| 1 0 5 0 | 0 0 0 1 0 0 0 0<br>0 1 0 1 0 0 0 0 | 0 1 0 0 0 0 1 1<br>1 0 0 0 0 0 1 1 |
| 2 1 4 2 | 0 0 1 0 0 0 0 1<br>0 1 0 0 0 0 1 0 | 0 1 0 1 0 1 0 0<br>0 1 1 1 0 1 0 1 |
| 0 0 1 5 | 0 0 0 0 0 0 0 0<br>0 0 0 1 1 0 1 1 | 0 1 0 1 0 1 0 0<br>0 1 1 0 1 0 1 0 |
| 0 2 9 0 | 0 0 0 0 0 0 1 0<br>1 1 1 1 0 0 0 0 | 0 1 0 1 0 1 1 1<br>1 1 1 0 0 1 0 1 |
| 1 0 5 0 | 0 0 0 1 0 0 0 0<br>1 0 1 1 0 0 0 0 | 0 1 1 0 0 1 0 1<br>1 0 1 0 0 1 0 1 |
| 2 1 4 2 | 0 0 1 0 0 0 0 1<br>0 1 0 0 0 0 1 0 | 0 1 1 1 0 1 1 0<br>1 0 0 1 0 1 1 1 |
| Decimal | 2 4 2 1 | Excess – 5 |

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(2) (a) Decimal : $1927_{10}$

$= 1024 + 512 + 256 + 128 + 4 + 2 + 1$

$= 1111000011_2 \times 2^0$

$= 1.1110000111_2 \times 2^{10}$

$= 1.1110000111_2 \times 2^{127}$

ans :

| 0 | 1 0 0 0 1 0 0 1 | 1 1 1 0 0 0 0 1 | 1 1 1 0 0 0 0 0 |
|---|---|---|---|
| | 4 | 4 F | 0 E |

| 0 0 0 0 0 0 0 |
|---|
| 0 0 |

$= 0x\ C\ 4\ 0\ 3\ 4\ 0\ 0\ 0$

(d) decimal : $-2004.5_{10}$

$= -1024 + 512 + 256 + 128 + 64 + 16 + 4 + 0.25$

$= -1111101000.01_2 \times 2^0$

$= -1.1111010001_2 \times 2^{10}$

$= -1.1110100010_2 \times 2^{137}$

ans :

| 1 | 1 0 0 0 1 0 0 1 | 1 1 1 1 0 1 0 1 | 0 0 0 1 0 0 0 0 |
|---|---|---|---|
| | C 4 | F A | 8 8 |

| 0 0 0 0 0 0 0 |
|---|
| 0 0 |

$= 0x\ C\ 4\ F\ A\ 8\ 8\ 0\ 0$

(3) a. $0x\ 4\ 0\ 0\ 0\ C\ C\ C\ D + 0x\ 4\ 0\ A\ 4\ 0\ 0\ 0\ 0$

$0x\ 4\ 0\ D\ 0\ C\ C\ C\ D$

| 0 | 1 0 0 0 0 0 0 0 | 1 0 1 0 0 0 0 0 | 1 1 0 0 1 1 0 0 | 1 1 0 0 1 1 0 1 |
|---|---|---|---|---|

| 0 0 1 1 0 1 |
|---|

$= 1.1010000011001100110011.01 \times 2^2$

$0x\ 4\ 0\ A\ 4\ 0\ 0\ 0\ 0$

| 0 | 1 0 0 0 0 0 0 1 | 0 1 0 0 1 0 0 0 | 0 0 0 0 0 0 0 0 | 0 0 0 0 |
|---|---|---|---|---|

| 0 0 0 0 0 0 |
|---|

$= 1.0010010001 \times 2^2$

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ans:

C: 1

1.101000011001100110011011 × $2^3$

1.001 × $2^2$

10.111010011001100110011001 × $2^2$

= 1.011101001100110011001100 × $2^3$

round up

= 1.011101001100110011001101

ans:

| 0 | 1 0 0 0 0 0 1 0 | 0 1 1 1 0 1 0 0 1 1 0 0 1 1 0 0 1 |
|---|---|---|
| | 4 | 1 3 A 6 6 7 |

| 1 0 0 1 1 1 |
|---|
| 6 7 |

= 0x413A6667

ⓑ 0x45098014 - 0x425CD1EC

0x45098014

| 0 | 1 0 0 0 1 0 1 0 | 0 0 0 1 0 0 1 1 0 0 0 0 0 0 0 0 0 |
|---|---|---|

| 0 1 0 1 0 0 |
|---|

exponent = $2^{11}$

0x425CD1EC

| 0 | 1 0 0 0 0 1 0 0 | 1 0 1 1 1 0 0 1 1 0 1 0 0 0 1 1 1 |
|---|---|---|

| 1 0 1 1 0 0 |
|---|

exponent = $2^5$

→ if a < b → a - b = -(b-a)

ans:

B: 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

1.0001001100000000000101000

0.0000001101111001101000111

1.0000110000011001100111000

B: ↑ ↑

00000

01100

10100 × $2^{11}$ → round up

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ans:

1.00001100000011001100111000

× $2^{11}$

| 0 | 1 0 0 0 1 0 1 0 | 0 0 0 0 1 1 0 0 0 0 0 1 1 0 0 1 1 |
|---|---|---|
| | 4 | 5 0 6 0 C |

| 0 0 1 1 0 1 |
|---|
| C D |

= 0x45060CCD