

Pair 1:

input 1: 1110111000101110 (Decimal: 60,974)

Worthless zeros: 0

Efficient 8 bits: 11101110 (Decimal: 238)

input 2: 0011011101110001 (Decimal: 14,193)

Worthless zeros: 2

Efficient 8 bits: 11011101 (Decimal: 221)

Total Worthless zeros added to left: 2

Product of Efficient 8-bit numbers: 1100110101110110 (Decimal: 52,598)

Final 32-bit Approximate multiplication: 00110011010111011000000000000000

Final 32-bit decimal Approximate multiplication: 861,765,632

Exact multiplication: 865,403,982

Error percent: 0.00420%

Pair 2:

input 1: 0011110001010011 (Decimal: 15,443)

Worthless zeros: 2

Efficient 8 bits: 11110001 (Decimal: 241)

input 2: 1100010111111000 (Decimal: 50,680)

Worthless zeros: 0

Efficient 8 bits: 11000101 (Decimal: 197)

Total Worthless zeros added to left: 2

Product of Efficient 8-bit numbers: 1011100101110101 (Decimal: 47,477)

Final 32-bit Approximate multiplication: 00101110010111010100000000000000

Final 32-bit decimal Approximate multiplication: 777,863,168

Exact multiplication: 782,651,240

Error percent: 0.00612%

Pair 3:

input 1: 0010011010101111 (Decimal: 9,903)

Worthless zeros: 2

Efficient 8 bits: 10011010 (Decimal: 154)

input 2: 1100001110000010 (Decimal: 50,050)

Worthless zeros: 0

Efficient 8 bits: 11000011 (Decimal: 195)

Total Worthless zeros added to left: 2

Product of Efficient 8-bit numbers: 0111010101001110 (Decimal: 30,030)

Final 32-bit Approximate multiplication: 00011101010100111000000000000000

Final 32-bit decimal Approximate multiplication: 492,011,520

Exact multiplication: 495,645,150

Error percent: 0.00733%

Pair 4:

input 1: 1000100111101000 (Decimal: 35,304)

Worthless zeros: 0

Efficient 8 bits: 10001001 (Decimal: 137)

input 2: 0100001001111010 (Decimal: 17,018)

Worthless zeros: 1

Efficient 8 bits: 10000100 (Decimal: 132)

Total Worthless zeros added to left: 1

Product of Efficient 8-bit numbers: 0100011010100100 (Decimal: 18,084)

Final 32-bit Approximate multiplication: 00100011010100100000000000000000

Final 32-bit decimal Approximate multiplication: 592,576,512

Exact multiplication: 600,803,472

Error percent: 0.01369%

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Pair 5:

input 1: 0000111101001100 (Decimal: 3,916)

Worthless zeros: 4

Efficient 8 bits: 11110100 (Decimal: 244)

input 2: 0000010010001000 (Decimal: 1,160)

Worthless zeros: 5

Efficient 8 bits: 10010001 (Decimal: 145)

Total Worthless zeros added to left: 9

Product of Efficient 8-bit numbers: 1000101000110100 (Decimal: 35,380)

Final 32-bit Approximate multiplication: 00000000010001010001101000000000

Final 32-bit decimal Approximate multiplication: 4,528,640

Exact multiplication: 4,542,560

Error percent: 0.00306%

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Pair 6:

input 1: 1101011001100101 (Decimal: 54,885)

Worthless zeros: 0

Efficient 8 bits: 11010110 (Decimal: 214)

input 2: 0010100100100000 (Decimal: 10,528)

Worthless zeros: 2

Efficient 8 bits: 10100100 (Decimal: 164)

Total Worthless zeros added to left: 2

Product of Efficient 8-bit numbers: 1000100100011000 (Decimal: 35,096)

Final 32-bit Approximate multiplication: 00100010010001100000000000000000

Final 32-bit decimal Approximate multiplication: 575,012,864

Exact multiplication: 577,829,280

Error percent: 0.00487%

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Pair 7:

input 1: 1010111001000101 (Decimal: 44,613)

Worthless zeros: 0

Efficient 8 bits: 10101110 (Decimal: 174)

input 2: 0100100000100111 (Decimal: 18,471)

Worthless zeros: 1

Efficient 8 bits: 10010000 (Decimal: 144)

Total Worthless zeros added to left: 1

Product of Efficient 8-bit numbers: 0110000111100000 (Decimal: 25,056)  
Final 32-bit Approximate multiplication: 00110000111100000000000000000000  
Final 32-bit decimal Approximate multiplication: 821,035,008  
Exact multiplication: 824,046,723  
Error percent: 0.00365%

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Pair 8:  
input 1: 1100000101100100 (Decimal: 49,508)  
Worthless zeros: 0  
Efficient 8 bits: 11000001 (Decimal: 193)  
  
input 2: 1000000011100101 (Decimal: 32,997)  
Worthless zeros: 0  
Efficient 8 bits: 10000000 (Decimal: 128)

Total Worthless zeros added to left: 0  
Product of Efficient 8-bit numbers: 0110000010000000 (Decimal: 24,704)  
Final 32-bit Approximate multiplication: 01100000100000000000000000000000  
Final 32-bit decimal Approximate multiplication: 1,619,001,344  
Exact multiplication: 1,633,615,476  
Error percent: 0.00895%

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