

IEEE-754 Binary-32 Floating-Point Addition

First Operand: $\times 2^5$

Second Operand: $\times 2^3$

Choice of Rounding: G/R/S
 Round to Nearest - Ties to Even
 Truncate
 Ceiling
 Floor

Digits Supported:

Compute **Clear**

Final Answer: 1.1001×2^5

Operand 1: 1.00111101×2^5
 Operand 2: 1.00111101×2^3

Solution Steps

1. Initial Normalization

Normalize both operands

Operand 1: 1.00111101×2^5
 Operand 2: 1.00111101×2^3

Compare the exponents

Operand 1: 1.00111101×2^5
 Operand 2: 1.00111101×2^3

Shift the number with smaller exponent to match the larger exponent

Operand 1: 1.00111101×2^5
 Operand 2: 0.01001111×2^5

Perform GRS

Operand 1: 1.0011111×2^5
 Operand 2: 0.0100111×2^5

2. Operation

Add the two operands

Operand 1: 1.0011111×2^5
 Operand 2: 0.0100111×2^5
 Sum: 1.1000110×2^5

3. Post operation Normalization

Normalize the sum

Sum: 1.1000110×2^5

Round to the appropriate number of bits using RTN-TE

Sum: 1.1001×2^5

4. Final Answer

Final Answer

1.1001×2^5

Save to text file

IEEE-754 Binary-32 Floating-Point Addition

First Operand: $\times 2^5$

Second Operand: $\times 2^3$

Choice of Rounding: G/R/S
 Round to Nearest - Ties to Even
 Truncate
 Ceiling
 Floor

Digits Supported:

Compute **Clear**

Final Answer: 1.1000×2^5

Operand 1: 1.00111000×2^5
 Operand 2: 1.00111000×2^3

Solution Steps

1. Initial Normalization

Normalize both operands

Operand 1: 1.00111000×2^5
 Operand 2: 1.00111000×2^3

Compare the exponents

Operand 1: 1.00111000×2^5
 Operand 2: 1.00111000×2^3

Shift the number with smaller exponent to match the larger exponent

Operand 1: 1.00111000×2^5
 Operand 2: 0.01001110×2^5

Perform GRS

Operand 1: 1.0011100×2^5
 Operand 2: 0.0100111×2^5

2. Operation

Add the two operands

Operand 1: 1.0011100×2^5
 Operand 2: 0.0100111×2^5
 Sum: 1.1000011×2^5

3. Post operation Normalization

Normalize the sum

Sum: 1.1000011×2^5

Round to the appropriate number of bits using RTN-TE

Sum: 1.1000×2^5

4. Final Answer

Final Answer

1.1000×2^5

Save to text file

IEEE-754 Binary-32 Floating-Point Addition

First Operand: $\times 2^5$

Second Operand: $\times 2^3$

Choice of Rounding: G/R/S
 Round to Nearest - Ties to Even
 Truncate
 Ceiling
 Floor

Digits Supported:

Compute **Clear**

Final Answer: 1.1000×2^5

Operand 1: 1.00110111×2^5
 Operand 2: 1.00110111×2^3

Solution Steps

1. Initial Normalization

Normalize both operands
 Operand 1: 1.00110111×2^5
 Operand 2: 1.00110111×2^3

Compare the exponents
 Operand 1: 1.00110111×2^5
 Operand 2: 1.00110111×2^3

Shift the number with smaller exponent to match the larger exponent

Operand 1: 1.00110111×2^5
 Operand 2: 0.01001101×2^5

Perform GRS

Operand 1: 1.00110111×2^5
 Operand 2: 0.01001111×2^5

2. Operation

Add the two operands

Operand 1: 1.00110111×2^5
 Operand 2: 0.01001111×2^5
 Sum: 1.1000010×2^5

3. Post operation Normalization

Normalize the sum

Sum: 1.1000010×2^5

Round to the appropriate number of bits using RTN-TE

Sum: 1.1000×2^5

4. Final Answer

Final Answer: 1.1000×2^5

Save to text file

IEEE-754 Binary-32 Floating-Point Addition

First Operand: $\times 2^5$

Second Operand: $\times 2^3$

Choice of Rounding: G/R/S
 Round to Nearest - Ties to Even
 Truncate
 Ceiling
 Floor

Digits Supported:

Compute **Clear**

Final Answer: 1.0001×2^5

Operand 1: -1.00111101×2^5
 Operand 2: 1.00111101×2^3

Solution Steps

1. Initial Normalization

Get the two's complement of the negative operand
 Operand 1: 0.11000011×2^5
 Operand 2: 1.00111101×2^3

Normalize both operands

Operand 1: 0.11000011×2^5
 Operand 2: 1.00111101×2^3

Compare the exponents

Operand 1: 0.11000011×2^5
 Operand 2: 1.00111101×2^3

Shift the number with smaller exponent to match the larger exponent

Operand 1: 0.11000011×2^5
 Operand 2: 0.01001111×2^5

Perform GRS

Operand 1: 0.11000011×2^5
 Operand 2: 0.01001111×2^5

2. Operation

Add the two operands

Operand 1: 0.11000011×2^5
 Operand 2: 0.01001111×2^5
 Sum: 1.0001000×2^5

3. Post operation Normalization

Normalize the sum

Sum: 1.0001000×2^5

Round to the appropriate number of bits using RTN-TE

Sum: 1.0001×2^5

4. Final Answer

Final Answer: 1.0001×2^5

Save to text file

IEEE-754 Binary-32 Floating-Point Addition

First Operand: -1.00111101 $\times 2^5$

Second Operand: 1.00111101 $\times 2^3$

Choice of Rounding:
 G/R/S
 Round to Nearest - Ties to Even
 Truncate
 Ceiling
 Floor

Digits Supported: 5

Compute **Clear**

Final Answer: 1.0001×2^5

Operand 1: -1.00111101 $\times 2^5$
 Operand 2: 1.00111101 $\times 2^3$

Solution Steps

1. Initial Normalization

Get the two's complement of the negative operand

Operand 1: 0.11000011 $\times 2^5$
 Operand 2: 1.00111101 $\times 2^3$

Normalize both operands

Operand 1: 0.11000011 $\times 2^5$
 Operand 2: 1.00111101 $\times 2^3$

Compare the exponents

Operand 1: 0.11000011 $\times 2^5$
 Operand 2: 1.00111101 $\times 2^3$

Shift the number with smaller exponent to match the larger exponent

Operand 1: 0.11000011 $\times 2^5$
 Operand 2: 0.01001111 $\times 2^5$

Perform GRS
 Operand 1: 0.1100001 $\times 2^5$
 Operand 2: 0.0100111 $\times 2^5$

2. Operation

Add the two operands
 Operand 1: 0.1100001 $\times 2^5$
 Operand 2: 0.0100111 $\times 2^5$
 Sum: 1.0001000 $\times 2^5$

3. Post operation Normalization

Normalize the sum
 Sum: 1.0001000 $\times 2^5$
 Round to the appropriate number of bits using RTN-TE
 Sum: 1.0001 $\times 2^5$

4. Final Answer

Final Answer
 1.0001 $\times 2^5$

Save to text file

IEEE-754 Binary-32 Floating-Point Addition

First Operand: -1.00111000 $\times 2^5$

Second Operand: 1.00111000 $\times 2^3$

Choice of Rounding:
 G/R/S
 Round to Nearest - Ties to Even
 Truncate
 Ceiling
 Floor

Digits Supported: 5

Compute **Clear**

Final Answer: 1.0001×2^5

Operand 1: -1.00111000 $\times 2^5$
 Operand 2: 1.00111000 $\times 2^3$

Solution Steps

1. Initial Normalization

Get the two's complement of the negative operand

Operand 1: 0.11001000 $\times 2^5$
 Operand 2: 1.00111000 $\times 2^3$

Normalize both operands

Operand 1: 0.11001000 $\times 2^5$
 Operand 2: 1.00111000 $\times 2^3$

Compare the exponents

Operand 1: 0.11001000 $\times 2^5$
 Operand 2: 1.00111000 $\times 2^3$

Shift the number with smaller exponent to match the larger exponent

Operand 1: 0.11001000 $\times 2^5$
 Operand 2: 0.01001110 $\times 2^5$

Perform GRS
 Operand 1: 0.1100100 $\times 2^5$
 Operand 2: 0.0100111 $\times 2^5$

2. Operation

Add the two operands
 Operand 1: 0.1100100 $\times 2^5$
 Operand 2: 0.0100111 $\times 2^5$
 Sum: 1.0001011 $\times 2^5$

3. Post operation Normalization

Normalize the sum
 Sum: 1.0001011 $\times 2^5$
 Round to the appropriate number of bits using RTN-TE
 Sum: 1.0001 $\times 2^5$

4. Final Answer

Final Answer
 1.0001 $\times 2^5$

Save to text file

IEEE-754 Binary-32 Floating-Point Addition

First Operand: $\times 2^5$

Second Operand: $\times 2^{-3}$

Choice of Rounding: G/R/S
 Round to Nearest - Ties to Even
 Truncate
 Ceiling
 Floor

Digits Supported:

Compute **Clear**

Final Answer: 1.1110×2^8

Operand 1: 100.111101×2^5
 Operand 2: 100111.101×2^{-3}

Solution Steps

1. Initial Normalization

Normalize both operands

Operand 1: 100111101×2^7
 Operand 2: 100111101×2^8

Compare the exponents

Operand 1: 100111101×2^7
 Operand 2: 100111101×2^8

Shift the number with smaller exponent to match the larger exponent

Operand 1: 0.10011110×2^8
 Operand 2: 1.00111101×2^8

Perform GRS

Operand 1: 0.1001111×2^8
 Operand 2: 1.0011111×2^8

2. Operation

Add the two operands

Operand 1: 0.1001111×2^8
 Operand 2: 1.0011111×2^8
 Sum: 1.1010110×2^8

3. Post operation Normalization

Normalize the sum

Sum: 1.1010110×2^8

Round to the appropriate number of bits using RTN-TE

Sum: 1.1110×2^8

4. Final Answer

Final Answer

1.1110×2^8

Save to text file

IEEE-754 Binary-32 Floating-Point Addition

First Operand: $\times 2^5$

Second Operand: $\times 2^{-3}$

Choice of Rounding: G/R/S
 Round to Nearest - Ties to Even
 Truncate
 Ceiling
 Floor

Digits Supported:

Compute **Clear**

Final Answer: 1.0100×2^7

Operand 1: 100.111101×2^5
 Operand 2: 100111.101×2^{-3}

Solution Steps

1. Initial Normalization

Normalize both operands

Operand 1: 100111101×2^7
 Operand 2: 100111101×2^2

Compare the exponents

Operand 1: 100111101×2^7
 Operand 2: 100111101×2^2

Shift the number with smaller exponent to match the larger exponent

Operand 1: 1.00111101×2^7
 Operand 2: 0.00001001×2^7

Perform GRS

Operand 1: 1.0011111×2^7
 Operand 2: 0.0000101×2^7

2. Operation

Add the two operands

Operand 1: 1.0011111×2^7
 Operand 2: 0.0000101×2^7
 Sum: 10100100×2^7

3. Post operation Normalization

Normalize the sum

Sum: 10100100×2^7

Round to the appropriate number of bits using RTN-TE

Sum: 10100×2^7

4. Final Answer

Final Answer

10100×2^7

Save to text file

IEEE-754 Binary-32 Floating-Point Addition

First Operand: -100.111101 $\times 2^5$

Second Operand: 100111.101 $\times 2^{-3}$

Choice of Rounding: G/R/S
 Round to Nearest - Ties to Even
 Truncate
 Ceiling
 Floor

Digits Supported: 5

Compute **Clear**

Final Answer: 0.1101×2^7

Operand 1: -100.111101 $\times 2^5$
 Operand 2: 100111.101 $\times 2^{-3}$

Solution Steps

1. Initial Normalization

Get the two's complement of the negative operand

Operand 1: 011.000011 $\times 2^5$
 Operand 2: 100111.101 $\times 2^{-3}$

Normalize both operands

Operand 1: 0.11000011 $\times 2^7$
 Operand 2: 1.00111101 $\times 2^2$

Compare the exponents

Operand 1: 0.11000011 $\times 2^7$
 Operand 2: 1.00111101 $\times 2^2$

Shift the number with smaller exponent to match the larger exponent

Operand 1: 0.11000011 $\times 2^7$
 Operand 2: 0.00001001 $\times 2^7$

2. Operation

Add the two operands

Operand 1: 0.1100001 $\times 2^7$
 Operand 2: 0.0000101 $\times 2^7$
 Sum: 0.1100110 $\times 2^7$

3. Post operation Normalization

Normalize the sum

Sum: 0.1100110 $\times 2^7$

Round to the appropriate number of bits using RTN-TE

Sum: 0.1101 $\times 2^7$

4. Final Answer

Final Answer

0.1101 $\times 2^7$

Save to textfile

IEEE-754 Binary-32 Floating-Point Addition

First Operand: -100.111101 $\times 2^5$

Second Operand: -100111.101 $\times 2^{-3}$

Choice of Rounding: G/R/S
 Round to Nearest - Ties to Even
 Truncate
 Ceiling
 Floor

Digits Supported: 5

Compute **Clear**

Final Answer: -1.0100×2^7

Operand 1: -100.111101 $\times 2^5$
 Operand 2: -100111.101 $\times 2^{-3}$

Solution Steps

1. Initial Normalization

Normalize both operands

Operand 1: -1.00111101 $\times 2^7$
 Operand 2: -1.00111101 $\times 2^2$

Compare the exponents

Operand 1: -1.00111101 $\times 2^7$
 Operand 2: -1.00111101 $\times 2^2$

Shift the number with smaller exponent to match the larger exponent

Operand 1: -1.00111101 $\times 2^7$
 Operand 2: -0.00001001 $\times 2^7$

Perform GRS

Operand 1: -1.0011111 $\times 2^7$
 Operand 2: -0.0000101 $\times 2^7$

2. Operation

Add the two operands

Operand 1: -1.0011111 $\times 2^7$
 Operand 2: -0.0000101 $\times 2^7$
 Sum: -1.0100100 $\times 2^7$

3. Post operation Normalization

Normalize the sum

Sum: -1.0100100 $\times 2^7$

Round to the appropriate number of bits using RTN-TE

Sum: -1.0100 $\times 2^7$

4. Final Answer

Final Answer

-1.0100 $\times 2^7$

Save to textfile

IEEE-754 Binary-32 Floating-Point Addition

First Operand: 1.00111101 $\times 2^5$

Second Operand: 1.00111101 $\times 2^3$

Choice of Rounding: G/R/S
 Round to Nearest - Ties to Even
 Truncate
 Ceiling
 Floor

Digits Supported: 3

Compute

Clear

Final Answer: 1.10×2^5

Operand 1: 1.00111101 $\times 2^5$
Operand 2: 1.00111101 $\times 2^3$

Solution Steps

1. Initial Normalization

Normalize both operands

Operand 1: 1.00111101 $\times 2^5$
Operand 2: 1.00111101 $\times 2^3$

Compare the exponents

Operand 1: 1.00111101 $\times 2^5$
Operand 2: 1.00111101 $\times 2^3$

Shift the number with smaller exponent to match the larger exponent

Operand 1: 1.00111101 $\times 2^5$
Operand 2: 0.01001111 $\times 2^5$

Perform GRS

Operand 1: 1.00111 $\times 2^5$
Operand 2: 0.01001 $\times 2^5$

2. Operation

Add the two operands

Operand 1: 1.00111 $\times 2^5$
Operand 2: 0.01001 $\times 2^5$
Sum: 1.10000 $\times 2^5$

3. Post operation Normalization

Normalize the sum

Sum: 1.10000 $\times 2^5$

Round to the appropriate number of bits using RTN-TE

Sum: 1.10 $\times 2^5$

4. Final Answer

Final Answer

1.10 $\times 2^5$

Save to text file

IEEE-754 Binary-32 Floating-Point Addition

First Operand: $\times 2^{^5}$

Second Operand: $\times 2^{^3}$

Choice of Rounding: G/R/S
 Round to Nearest - Ties to Even
 Truncate
 Ceiling
 Floor

Digits Supported:

Compute **Clear**

Final Answer: $1.1001 \times 2^{^5}$

Operand 1: $1.0011101 \times 2^{^5}$
Operand 2: $1.0011101 \times 2^{^3}$

Solution Steps

1. Initial Normalization

Normalize both operands
Operand 1: $1.0011101 \times 2^{^5}$
Operand 2: $1.0011101 \times 2^{^3}$

Compare the exponents
Operand 1: $1.0011101 \times 2^{^5}$
Operand 2: $1.0011101 \times 2^{^3}$

Shift the number with smaller exponent to match the larger exponent

Operand 1: $1.0011101 \times 2^{^5}$
Operand 2: $0.0100111 \times 2^{^5}$

Perform RTN-TE

Operand 1: $1.0100 \times 2^{^5}$
Operand 2: $0.0101 \times 2^{^5}$

2. Operation

Add the two operands

Operand 1: $1.0100 \times 2^{^5}$
Operand 2: $0.0101 \times 2^{^5}$
Sum: $1.1001 \times 2^{^5}$

3. Post operation Normalization

Normalize the sum

Sum: $1.1001 \times 2^{^5}$

Round to the appropriate number of bits using RTN-TE

Sum: $1.1001 \times 2^{^5}$

4. Final Answer

Final Answer

$1.1001 \times 2^{^5}$

Save to text file

IEEE-754 Binary-32 Floating-Point Addition

First Operand: $\times 2^{^5}$

Second Operand: $\times 2^{^3}$

Choice of Rounding: G/R/S
 Round to Nearest - Ties to Even
 Truncate
 Ceiling
 Floor

Digits Supported:

Compute **Clear**

Final Answer: $1.1000 \times 2^{^5}$

Operand 1: $1.00111000 \times 2^{^5}$
Operand 2: $1.00111000 \times 2^{^3}$

Solution Steps

1. Initial Normalization

Normalize both operands
Operand 1: $1.00111000 \times 2^{^5}$
Operand 2: $1.00111000 \times 2^{^3}$

Compare the exponents

Operand 1: $1.00111000 \times 2^{^5}$
Operand 2: $1.00111000 \times 2^{^3}$

Shift the number with smaller exponent to match the larger exponent

Operand 1: $1.00111000 \times 2^{^5}$
Operand 2: $0.01001110 \times 2^{^5}$

Perform RTN-TE

Operand 1: $1.0011 \times 2^{^5}$
Operand 2: $0.0101 \times 2^{^5}$

2. Operation

Add the two operands

Operand 1: $1.0011 \times 2^{^5}$
Operand 2: $0.0101 \times 2^{^5}$
Sum: $1.1000 \times 2^{^5}$

3. Post operation Normalization

Normalize the sum

Sum: $1.1000 \times 2^{^5}$

Round to the appropriate number of bits using RTN-TE

Sum: $1.1000 \times 2^{^5}$

4. Final Answer

Final Answer

$1.1000 \times 2^{^5}$

Save to text file

IEEE-754 Binary-32 Floating-Point Addition

First Operand: -1.00111101 $\times 2^5$

Second Operand: 1.00111101 $\times 2^3$

Choice of Rounding:

- G/R/S
- Round to Nearest - Ties to Even
- Truncate
- Ceiling
- Floor

Digits Supported: 5

Compute

Clear

Final Answer: 1.0001×2^5

Operand 1: -1.00111101 $\times 2^5$
 Operand 2: 1.00111101 $\times 2^3$

Solution Steps

1. Initial Normalization

Get the two's complement of the negative operand

Operand 1: 0.11000011 $\times 2^5$
 Operand 2: 1.00111101 $\times 2^3$

Normalize both operands

Operand 1: 0.11000011 $\times 2^5$
 Operand 2: 1.00111101 $\times 2^3$

Compare the exponents

Operand 1: 0.11000011 $\times 2^5$
 Operand 2: 1.00111101 $\times 2^3$

Shift the number with smaller exponent to match the larger exponent

Operand 1: 0.11000011 $\times 2^5$
 Operand 2: 0.01001111 $\times 2^5$

Perform RTN-TE

Operand 1: 0.1100 $\times 2^5$
 Operand 2: 0.0101 $\times 2^5$

2. Operation

Add the two operands

Operand 1: 0.1100 $\times 2^5$
 Operand 2: 0.0101 $\times 2^5$
 Sum: 1.0001 $\times 2^5$

3. Post operation Normalization

Normalize the sum

Sum: 1.0001 $\times 2^5$

Round to the appropriate number of bits using RTN-TE

Sum: 1.0001 $\times 2^5$

4. Final Answer

Final Answer

1.0001 $\times 2^5$

Save to text file

IEEE-754 Binary-32 Floating-Point Addition

First Operand: 100.111101 $\times 2^5$

Second Operand: 100111.101 $\times 2^3$

Choice of Rounding:

- G/R/S
- Round to Nearest - Ties to Even
- Truncate
- Ceiling
- Floor

Digits Supported: 5

Compute

Clear

Final Answer: 1.1110×2^8

Operand 1: 100.111101 $\times 2^5$
 Operand 2: 100111.101 $\times 2^3$

Solution Steps

1. Initial Normalization

Normalize both operands

Operand 1: 1.00111101 $\times 2^7$
 Operand 2: 1.00111101 $\times 2^8$

Compare the exponents

Operand 1: 1.00111101 $\times 2^7$
 Operand 2: 1.00111101 $\times 2^8$

Shift the number with smaller exponent to match the larger exponent

Operand 1: 0.10011110 $\times 2^8$
 Operand 2: 1.00111101 $\times 2^8$

Perform RTN-TE

Operand 1: 0.1010 $\times 2^8$
 Operand 2: 1.0100 $\times 2^8$

2. Operation

Add the two operands

Operand 1: 0.1010 $\times 2^8$
 Operand 2: 1.0100 $\times 2^8$
 Sum: 1.1110 $\times 2^8$

3. Post operation Normalization

Normalize the sum

Sum: 1.1110 $\times 2^8$

Round to the appropriate number of bits using RTN-TE

Sum: 1.1110 $\times 2^8$

4. Final Answer

Final Answer

1.1110 $\times 2^8$

Save to text file

IEEE-754 Binary-32 Floating-Point Addition

First Operand:

1.00111101

$\times 2^5$

Second Operand:

1.00111101

$\times 2^3$

Choice of Rounding:

G/R/S

Round to Nearest - Ties to Even

Truncate

Ceiling

Floor

Digits Supported:

3

Compute

Clear

Final Answer: 1.10×2^5

Operand 1:

1.00111101 $\times 2^5$

Operand 2:

1.00111101 $\times 2^3$

Solution Steps

1. Initial Normalization

Normalize both operands

Operand 1:

1.00111101 $\times 2^5$

Operand 2:

1.00111101 $\times 2^3$

Compare the exponents

Operand 1:

1.00111101 $\times 2^5$

Operand 2:

1.00111101 $\times 2^3$

Shift the number with smaller exponent to match the larger exponent

Operand 1:

1.00111101 $\times 2^5$

Operand 2:

0.01001111 $\times 2^5$

Perform RTN-TE

Operand 1:

1.01 $\times 2^5$

Operand 2:

0.01 $\times 2^5$

2. Operation

Add the two operands

Operand 1:

1.01 $\times 2^5$

Operand 2:

0.01 $\times 2^5$

Sum:

1.10 $\times 2^5$

3. Post operation Normalization

Normalize the sum

Sum:

1.10 $\times 2^5$

Round to the appropriate number of bits using RTN-TE

Sum:

1.10 $\times 2^5$

4. Final Answer

Final Answer

1.10 $\times 2^5$

Save to text file

IEEE-754 Binary-32 Floating-Point Addition

First Operand: $\times 2^5$

Second Operand: $\times 2^3$

Choice of Rounding: G/R/S
 Round to Nearest - Ties to Even
 Truncate
 Ceiling
 Floor

Digits Supported:

Compute **Clear**

Final Answer: 1.0111×2^5

Operand 1: 1.00111101×2^5
 Operand 2: 1.00111101×2^3

Solution Steps

1. Initial Normalization

Normalize both operands
 Operand 1: 1.00111101×2^5
 Operand 2: 1.00111101×2^3

Compare the exponents

Operand 1: 1.00111101×2^5
 Operand 2: 1.00111101×2^3

Shift the number with smaller exponent to match the larger exponent

Operand 1: 1.00111101×2^5
 Operand 2: 0.01001111×2^5

Perform Rounding - Truncate

Operand 1: 1.0011×2^5
 Operand 2: 0.0100×2^5

2. Operation

Add the two operands

Operand 1: 1.0011×2^5
 Operand 2: 0.0100×2^5
 Sum: 1.0111×2^5

3. Post operation Normalization

Normalize the sum

Sum: 1.0111×2^5
 Round to the appropriate number of bits using RTN-TE
 Sum: 1.0111×2^5

4. Final Answer

Final Answer: 1.0111×2^5

Save to text file

IEEE-754 Binary-32 Floating-Point Addition

First Operand: $\times 2^5$

Second Operand: $\times 2^3$

Choice of Rounding: G/R/S
 Round to Nearest - Ties to Even
 Truncate
 Ceiling
 Floor

Digits Supported:

Compute **Clear**

Final Answer: 1.0000×2^5

Operand 1: -1.00111101×2^5
 Operand 2: 1.00111101×2^3

Solution Steps

1. Initial Normalization

Get the twos complement of the negative operand

Operand 1: 0.11000011×2^5
 Operand 2: 1.00111101×2^3

Normalize both operands

Operand 1: 0.11000011×2^5
 Operand 2: 1.00111101×2^3

Compare the exponents

Operand 1: 0.11000011×2^5
 Operand 2: 1.00111101×2^3

Shift the number with smaller exponent to match the larger exponent

Operand 1: 0.11000011×2^5
 Operand 2: 0.01001111×2^5

Perform Rounding - Truncate

Operand 1: 0.1100×2^5
 Operand 2: 0.0100×2^5

2. Operation

Add the two operands

Operand 1: 0.1100×2^5
 Operand 2: 0.0100×2^5
 Sum: 1.0000×2^5

3. Post operation Normalization

Normalize the sum

Sum: 1.0000×2^5

Round to the appropriate number of bits using RTN-TE

Sum: 1.0000×2^5

4. Final Answer

Final Answer: 1.0000×2^5

Save to text file

IEEE-754 Binary-32 Floating-Point Addition

First Operand: $\times 2^5$

Second Operand: $\times 2^{-3}$

Choice of Rounding: G/R/S
 Round to Nearest - Ties to Even
 Truncate
 Ceiling
 Floor

Digits Supported:

Compute **Clear**

Final Answer: 0.1100×2^7

Operand 1: -100.111101×2^5
 Operand 2: 100111.101×2^{-3}

Solution Steps

1. Initial Normalization

Get the two's complement of the negative operand

Operand 1: 011.000011×2^5
 Operand 2: 100111.101×2^{-3}

Normalize both operands

Operand 1: 0.11000011×2^7
 Operand 2: 1.00111101×2^2

Compare the exponents

Operand 1: 0.11000011×2^7
 Operand 2: 1.00111101×2^2

Shift the number with smaller exponent to match the larger exponent

Operand 1: 0.11000011×2^7
 Operand 2: 0.00001001×2^7

Perform Rounding - Truncate

Operand 1:	0.1100×2^7
Operand 2:	0.0000×2^7

2. Operation

Add the two operands

Operand 1:	0.1100×2^7
Operand 2:	0.0000×2^7
Sum:	0.1100×2^7

3. Post operation Normalization

Normalize the sum

Sum:	0.1100×2^7
------	---------------------

Round to the appropriate number of bits using RTN-TE

Sum:	0.1100×2^7
------	---------------------

4. Final Answer

Final Answer

Sum:	0.1100×2^7
------	---------------------

Save to text file

IEEE-754 Binary-32 Floating-Point Addition

First Operand: $\times 2^5$

Second Operand: $\times 2^3$

Choice of Rounding: G/R/S
 Round to Nearest - Ties to Even
 Truncate
 Ceiling
 Floor

Digits Supported:

Compute **Clear**

Final Answer: 1.00×2^5

Operand 1: -1.00111101×2^5
 Operand 2: 1.00111101×2^3

Solution Steps

1. Initial Normalization

Get the two's complement of the negative operand

Operand 1: 0.11000011×2^5
 Operand 2: 1.00111101×2^3

Normalize both operands

Operand 1: 0.11000011×2^5
 Operand 2: 1.00111101×2^3

Compare the exponents

Operand 1: 0.11000011×2^5
 Operand 2: 1.00111101×2^3

Shift the number with smaller exponent to match the larger exponent

Operand 1: 0.11000011×2^5
 Operand 2: 0.01001111×2^5

Perform Rounding - Truncate

Operand 1:	0.11×2^5
Operand 2:	0.01×2^5

2. Operation

Add the two operands

Operand 1:	0.11×2^5
Operand 2:	0.01×2^5
Sum:	1.00×2^5

3. Post operation Normalization

Normalize the sum

Sum:	1.00×2^5
------	-------------------

Round to the appropriate number of bits using RTN-TE

Sum:	1.00×2^5
------	-------------------

4. Final Answer

Final Answer

Sum:	1.00×2^5
------	-------------------

Save to text file

IEEE-754 Binary-32 Floating-Point Addition

First Operand: $\times 2^5$

Second Operand: $\times 2^3$

Choice of Rounding:

- G/R/S
- Round to Nearest - Ties to Even
- Truncate
- Ceiling
- Floor

Digits Supported:

Compute **Clear**

Final Answer: 1.0111×2^5

Operand 1: 1.00111101×2^5
 Operand 2: 1.00111101×2^3

Solution Steps

1. Initial Normalization

Normalize both operands

Operand 1:	1.00111101×2^5
Operand 2:	1.00111101×2^3

Compare the exponents

Operand 1:	1.00111101×2^5
Operand 2:	1.00111101×2^3

Shift the number with smaller exponent to match the larger exponent

Operand 1:	1.00111101×2^5
Operand 2:	0.01001111×2^5

Perform Rounding - Floor

Operand 1:	1.0011×2^5
Operand 2:	0.0100×2^5

2. Operation

Add the two operands

Operand 1:	1.0011×2^5
Operand 2:	0.0100×2^5
Sum:	1.0111×2^5

3. Post operation Normalization

Normalize the sum

Sum:	1.0111×2^5
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Round to the appropriate number of bits using RTN-TE

Sum:	1.0111×2^5
------	---------------------

4. Final Answer

Final Answer

Sum:	1.0111×2^5
------	---------------------

Save to text file

IEEE-754 Binary-32 Floating-Point Addition

First Operand: $\times 2^5$

Second Operand: $\times 2^3$

Choice of Rounding:

- G/R/S
- Round to Nearest - Ties to Even
- Truncate
- Ceiling
- Floor

Digits Supported:

Compute **Clear**

Final Answer: 1.0111×2^5

Operand 1: 1.00111000×2^5
 Operand 2: 1.00111000×2^3

Solution Steps

1. Initial Normalization

Normalize both operands

Operand 1:	1.00111000×2^5
Operand 2:	1.00111000×2^3

Compare the exponents

Operand 1:	1.00111000×2^5
Operand 2:	1.00111000×2^3

Shift the number with smaller exponent to match the larger exponent

Operand 1:	1.00111000×2^5
Operand 2:	0.01001110×2^5

Perform Rounding - Floor

Operand 1:	1.0011×2^5
Operand 2:	0.0100×2^5

2. Operation

Add the two operands

Operand 1:	1.0011×2^5
Operand 2:	0.0100×2^5
Sum:	1.0111×2^5

3. Post operation Normalization

Normalize the sum

Sum:	1.0111×2^5
------	---------------------

Round to the appropriate number of bits using RTN-TE

Sum:	1.0111×2^5
------	---------------------

4. Final Answer

Final Answer

Sum:	1.0111×2^5
------	---------------------

Save to text file

IEEE-754 Binary-32 Floating-Point Addition

First Operand: $\times 2^5$

Second Operand: $\times 2^3$

Choice of Rounding:

- G/R/S
- Round to Nearest - Ties to Even
- Truncate
- Ceiling
- Floor

Digits Supported:

Compute

Clear

Final Answer: 1.0111×2^5

Operand 1: 1.00110111×2^5
Operand 2: 1.00110111×2^3

Solution Steps

1. Initial Normalization

Normalize both operands

Operand 1: 1.00110111×2^5
Operand 2: 1.00110111×2^3

Compare the exponents

Operand 1: 1.00110111×2^5
Operand 2: 1.00110111×2^3

Shift the number with smaller exponent to match the larger exponent

Operand 1: 1.00110111×2^5
Operand 2: 0.01001101×2^5

Perform Rounding - Floor

Operand 1: 1.0011×2^5
Operand 2: 0.0100×2^5

2. Operation

Add the two operands

Operand 1: 1.0011×2^5
Operand 2: 0.0100×2^5
Sum: 1.0111×2^5

3. Post operation Normalization

Normalize the sum

Sum: 1.0111×2^5
Round to the appropriate number of bits using RTN-TE
Sum: 1.0111×2^5

4. Final Answer

Final Answer

1.0111×2^5

Save to text file

IEEE-754 Binary-32 Floating-Point Addition

First Operand: $\times 2^5$

Second Operand: $\times 2^3$

Choice of Rounding:

- G/R/S
- Round to Nearest - Ties to Even
- Truncate
- Ceiling
- Floor

Digits Supported:

Compute

Clear

Final Answer: 1.0001×2^5

Operand 1: -1.00111101×2^5
Operand 2: 1.00111101×2^3

Solution Steps

1. Initial Normalization

Get the two's complement of the negative operand

Operand 1: 0.11000011×2^5
Operand 2: 1.00111101×2^3

Normalize both operands

Operand 1: 0.11000011×2^5
Operand 2: 1.00111101×2^3

Compare the exponents

Operand 1: 0.11000011×2^5
Operand 2: 1.00111101×2^3

Shift the number with smaller exponent to match the larger exponent

Operand 1: 0.11000011×2^5
Operand 2: 0.01001111×2^5

Perform Rounding - Floor

Operand 1: 0.1101×2^5
Operand 2: 0.0100×2^5

2. Operation

Add the two operands

Operand 1: 0.1101×2^5
Operand 2: 0.0100×2^5
Sum: 0.1001×2^5

3. Post operation Normalization

Normalize the sum

Sum: 0.1001×2^5
Round to the appropriate number of bits using RTN-TE
Sum: 0.1001×2^5

4. Final Answer

Final Answer

1.0001×2^5

Save to text file

IEEE-754 Binary-32 Floating-Point Addition

First Operand: $\times 2^5$

Second Operand: $\times 2^3$

Choice of Rounding: G/R/S
 Round to Nearest - Ties to Even
 Truncate
 Ceiling
 Floor

Digits Supported:

Compute **Clear**

Final Answer: 1.0001×2^5

Operand 1: -1.00111000×2^5
 Operand 2: 1.00111000×2^3

Solution Steps

1. Initial Normalization

Get the two's complement of the negative operand

Operand 1:	0.11001000	$\times 2^5$
Operand 2:	1.00111000	$\times 2^3$

Normalize both operands

Operand 1:	0.11001000	$\times 2^5$
Operand 2:	1.00111000	$\times 2^3$

Compare the exponents

Operand 1:	0.11001000	$\times 2^5$
Operand 2:	1.00111000	$\times 2^3$

Shift the number with smaller exponent to match the larger exponent

Operand 1:	0.11001000	$\times 2^5$
Operand 2:	0.01001110	$\times 2^5$

Perform Rounding - Floor

Operand 1:	0.1101	$\times 2^5$
Operand 2:	0.0100	$\times 2^5$

2. Operation

Add the two operands

Operand 1:	0.1101	$\times 2^5$
Operand 2:	0.0100	$\times 2^5$
Sum:	1.0001	$\times 2^5$

3. Post operation Normalization

Normalize the sum

Sum:	1.0001	$\times 2^5$
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Round to the appropriate number of bits using RTN-TE

Sum:	1.0001	$\times 2^5$
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4. Final Answer

Final Answer

Sum:	1.0001	$\times 2^5$
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IEEE-754 Binary-32 Floating-Point Addition

First Operand: $\times 2^5$

Second Operand: $\times 2^3$

Choice of Rounding: G/R/S
 Round to Nearest - Ties to Even
 Truncate
 Ceiling
 Floor

Digits Supported:

Compute **Clear**

Final Answer: 1.0001×2^5

Operand 1: -1.00110111×2^5
 Operand 2: 1.00110111×2^3

Solution Steps

1. Initial Normalization

Get the two's complement of the negative operand

Operand 1:	0.11001001	$\times 2^5$
Operand 2:	1.00110111	$\times 2^3$

Normalize both operands

Operand 1:	0.11001001	$\times 2^5$
Operand 2:	1.00110111	$\times 2^3$

Compare the exponents

Operand 1:	0.11001001	$\times 2^5$
Operand 2:	1.00110111	$\times 2^3$

Shift the number with smaller exponent to match the larger exponent

Operand 1:	0.11001001	$\times 2^5$
Operand 2:	0.01001101	$\times 2^5$

Perform Rounding - Floor

Operand 1:	0.1101	$\times 2^5$
Operand 2:	0.0100	$\times 2^5$

2. Operation

Add the two operands

Operand 1:	0.1101	$\times 2^5$
Operand 2:	0.0100	$\times 2^5$
Sum:	1.0001	$\times 2^5$

3. Post operation Normalization

Normalize the sum

Sum:	1.0001	$\times 2^5$
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Round to the appropriate number of bits using RTN-TE

Sum:	1.0001	$\times 2^5$
------	--------	--------------

4. Final Answer

Final Answer

Sum:	1.0001	$\times 2^5$
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IEEE-754 Binary-32 Floating-Point Addition

First Operand:

100.111101 $\times 2^5$

Second Operand:

100111.101 $\times 2^{-3}$

Choice of Rounding:

- G/R/S
- Round to Nearest - Ties to Even
- Truncate
- Ceiling
- Floor

Digits Supported:

5

Compute

Clear

Final Answer: 1.1100×2^8

Operand 1:

100.111101 $\times 2^5$

Operand 2:

100111.101 $\times 2^{-3}$

Solution Steps

1. Initial Normalization

Normalize both operands

Operand 1: 100111101 $\times 2^7$
Operand 2: 100111101 $\times 2^8$

Compare the exponents

Operand 1: 100111101 $\times 2^7$
Operand 2: 100111101 $\times 2^8$

Shift the number with smaller exponent to match the larger exponent

Operand 1: 0.10011110 $\times 2^8$
Operand 2: 100111101 $\times 2^8$

Perform Rounding - Floor

Operand 1: 0.1001 $\times 2^8$
Operand 2: 1.0011 $\times 2^8$

2. Operation

Add the two operands

Operand 1: 0.1001 $\times 2^8$
Operand 2: 1.0011 $\times 2^8$
Sum: 1.1100 $\times 2^8$

3. Post operation Normalization

Normalize the sum

Sum: 1.1100 $\times 2^8$

Round to the appropriate number of bits using RTN-TE

Sum: 1.1100 $\times 2^8$

4. Final Answer

Final Answer

1.1100 $\times 2^8$

Save to text file

IEEE-754 Binary-32 Floating-Point Addition

First Operand:

100.111101 $\times 2^5$

Second Operand:

100111.101 $\times 2^{-3}$

Choice of Rounding:

- G/R/S
- Round to Nearest - Ties to Even
- Truncate
- Ceiling
- Floor

Digits Supported:

5

Compute

Clear

Final Answer: 1.0011×2^7

Operand 1:

100.111101 $\times 2^5$

Operand 2:

100111.101 $\times 2^{-3}$

Solution Steps

1. Initial Normalization

Normalize both operands

Operand 1: 100111101 $\times 2^7$
Operand 2: 100111101 $\times 2^2$

Compare the exponents

Operand 1: 100111101 $\times 2^7$
Operand 2: 100111101 $\times 2^2$

Shift the number with smaller exponent to match the larger exponent

Operand 1: 100111101 $\times 2^7$
Operand 2: 0.00001001 $\times 2^7$

Perform Rounding - Floor

Operand 1: 1.0011 $\times 2^7$
Operand 2: 0.0000 $\times 2^7$

2. Operation

Add the two operands

Operand 1: 1.0011 $\times 2^7$
Operand 2: 0.0000 $\times 2^7$
Sum: 1.0011 $\times 2^7$

3. Post operation Normalization

Normalize the sum

Sum: 1.0011 $\times 2^7$

Round to the appropriate number of bits using RTN-TE

Sum: 1.0011 $\times 2^7$

4. Final Answer

Final Answer

1.0011 $\times 2^7$

Save to text file

IEEE-754 Binary-32 Floating-Point Addition

First Operand:

-100.111101 $\times 2^5$

Second Operand:

100111.101 $\times 2^{-3}$

Choice of Rounding:

- G/R/S
- Round to Nearest - Ties to Even
- Truncate
- Ceiling
- Floor

Digits Supported:

5

Compute

Clear

Final Answer: 0.1101×2^7

Operand 1:

-100.111101 $\times 2^5$

Operand 2:

100111.101 $\times 2^{-3}$

Solution Steps

1. Initial Normalization

Get the two's complement of the negative operand

Operand 1: 011000011 $\times 2^5$
Operand 2: 100111.101 $\times 2^{-3}$

Normalize both operands

Operand 1: 0.11000011 $\times 2^7$
Operand 2: 1.00111101 $\times 2^2$

Compare the exponents

Operand 1: 0.11000011 $\times 2^7$
Operand 2: 1.00111101 $\times 2^2$

Shift the number with smaller exponent to match the larger exponent

Operand 1: 0.11000011 $\times 2^7$
Operand 2: 0.00001001 $\times 2^7$

Perform Rounding - Floor

Operand 1: 0.1101 $\times 2^7$
Operand 2: 0.0000 $\times 2^7$

2. Operation

Add the two operands

Operand 1: 0.1101 $\times 2^7$
Operand 2: 0.0000 $\times 2^7$
Sum: 0.1101 $\times 2^7$

3. Post operation Normalization

Normalize the sum

Sum: 0.1101 $\times 2^7$

Round to the appropriate number of bits using RTN-TE

Sum: 0.1101 $\times 2^7$

4. Final Answer

Final Answer

0.1101 $\times 2^7$

IEEE-754 Binary-32 Floating-Point Addition

First Operand:

-100.111101 $\times 2^5$

Second Operand:

-100111.101 $\times 2^{-3}$

Choice of Rounding:

- G/R/S
- Round to Nearest - Ties to Even
- Truncate
- Ceiling
- Floor

Digits Supported:

5

Compute

Clear

Final Answer: -1.0101×2^7

Operand 1:

-100.111101 $\times 2^5$

Operand 2:

-100111.101 $\times 2^{-3}$

Solution Steps

1. Initial Normalization

Normalize both operands

Operand 1: -1.00111101 $\times 2^7$
Operand 2: -1.00111101 $\times 2^2$

Compare the exponents

Operand 1: -1.00111101 $\times 2^7$
Operand 2: -1.00111101 $\times 2^2$

Shift the number with smaller exponent to match the larger exponent

Operand 1: -1.00111101 $\times 2^7$
Operand 2: -0.00001001 $\times 2^7$

Perform Rounding - Floor

Operand 1: -1.0100 $\times 2^7$
Operand 2: -0.0001 $\times 2^7$

2. Operation

Add the two operands

Operand 1: -1.0100 $\times 2^7$
Operand 2: -0.0001 $\times 2^7$
Sum: -1.0101 $\times 2^7$

3. Post operation Normalization

Normalize the sum

Sum: -1.0101 $\times 2^7$

Round to the appropriate number of bits using RTN-TE

Sum: -1.0101 $\times 2^7$

4. Final Answer

Final Answer

-1.0101 $\times 2^7$

Save to text file

IEEE-754 Binary-32 Floating-Point Addition

First Operand:

1.00111101 $\times 2^5$

Second Operand:

1.00111101 $\times 2^3$

Choice of Rounding:

- G/R/S
- Round to Nearest - Ties to Even
- Truncate
- Ceiling
- Floor

Digits Supported:

3

Compute

Clear

Final Answer: 1.01×2^5

Operand 1:

1.00111101 $\times 2^5$

Operand 2:

1.00111101 $\times 2^3$

Solution Steps

1. Initial Normalization

Normalize both operands

Operand 1: 1.00111101 $\times 2^5$
Operand 2: 1.00111101 $\times 2^3$

Compare the exponents

Operand 1: 1.00111101 $\times 2^5$
Operand 2: 1.00111101 $\times 2^3$

Shift the number with smaller exponent to match the larger exponent

Operand 1: 1.00111101 $\times 2^5$
Operand 2: 0.01001111 $\times 2^5$

Perform Rounding - Floor

Operand 1: 1.00 $\times 2^5$
Operand 2: 0.01 $\times 2^5$

2. Operation

Add the two operands

Operand 1: 1.00 $\times 2^5$
Operand 2: 0.01 $\times 2^5$
Sum: 1.01 $\times 2^5$

3. Post operation Normalization

Normalize the sum

Sum: 1.01 $\times 2^5$

Round to the appropriate number of bits using RTN-TE

Sum: 1.01 $\times 2^5$

4. Final Answer

Final Answer

1.01 $\times 2^5$

Save to text file

IEEE-754 Binary-32 Floating-Point Addition

First Operand: $\times 2^5$

Second Operand: $\times 2^3$

Choice of Rounding:

- G/R/S
- Round to Nearest - Ties to Even
- Truncate
- Ceiling
- Floor

Digits Supported:

Compute **Clear**

Final Answer: 1.1001×2^5

Operand 1: 1.00111101×2^5
Operand 2: 1.00111101×2^3

Solution Steps

1. Initial Normalization

Normalize both operands

Operand 1:	1.00111101×2^5
Operand 2:	1.00111101×2^3

Compare the exponents

Operand 1:	1.00111101×2^5
Operand 2:	1.00111101×2^3

Shift the number with smaller exponent to match the larger exponent

Operand 1:	1.00111101×2^5
Operand 2:	0.01001111×2^5

Perform Rounding - Ceiling

Operand 1:	10100×2^5
Operand 2:	0.0101×2^5

2. Operation

Add the two operands

Operand 1:	10100×2^5
Operand 2:	0.0101×2^5
Sum:	11001×2^5

3. Post operation Normalization

Normalize the sum

Sum:	11001×2^5
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Round to the appropriate number of bits using RTN-TE

Sum:	1.1001×2^5
------	---------------------

4. Final Answer

Final Answer

Sum:	1.1001×2^5
------	---------------------

Save to text file

IEEE-754 Binary-32 Floating-Point Addition

First Operand: $\times 2^5$

Second Operand: $\times 2^3$

Choice of Rounding:

- G/R/S
- Round to Nearest - Ties to Even
- Truncate
- Ceiling
- Floor

Digits Supported:

Compute **Clear**

Final Answer: 1.1001×2^5

Operand 1: 1.00111000×2^5
Operand 2: 1.00111000×2^3

Solution Steps

1. Initial Normalization

Normalize both operands

Operand 1:	1.00111000×2^5
Operand 2:	1.00111000×2^3

Compare the exponents

Operand 1:	1.00111000×2^5
Operand 2:	1.00111000×2^3

Shift the number with smaller exponent to match the larger exponent

Operand 1:	1.00111000×2^5
Operand 2:	0.01001110×2^5

Perform Rounding - Ceiling

Operand 1:	10100×2^5
Operand 2:	0.0101×2^5

2. Operation

Add the two operands

Operand 1:	10100×2^5
Operand 2:	0.0101×2^5
Sum:	11001×2^5

3. Post operation Normalization

Normalize the sum

Sum:	11001×2^5
------	--------------------

Round to the appropriate number of bits using RTN-TE

Sum:	1.1001×2^5
------	---------------------

4. Final Answer

Final Answer

Sum:	1.1001×2^5
------	---------------------

Save to text file

IEEE-754 Binary-32 Floating-Point Addition

First Operand: $\times 2^5$

Second Operand: $\times 2^3$

Choice of Rounding:

- G/R/S
- Round to Nearest - Ties to Even
- Truncate
- Ceiling
- Floor

Digits Supported:

Compute **Clear**

Final Answer: 1.1001×2^5

Operand 1: 1.00110111×2^5
 Operand 2: 1.00110111×2^3

Solution Steps

1. Initial Normalization

Normalize both operands

Operand 1:	1.00110111×2^5
Operand 2:	1.00110111×2^3

Compare the exponents

Operand 1:	1.00110111×2^5
Operand 2:	1.00110111×2^3

Shift the number with smaller exponent to match the larger exponent

Operand 1:	1.00110111×2^5
Operand 2:	0.01001101×2^5

Perform Rounding - Ceiling

Operand 1:	1.0100×2^5
Operand 2:	0.0101×2^5

2. Operation

Add the two operands

Operand 1:	1.0100×2^5
Operand 2:	0.0101×2^5
Sum:	1.1001×2^5

3. Post operation Normalization

Normalize the sum

Sum:	1.1001×2^5
------	---------------------

Round to the appropriate number of bits using RTN-TE

Sum:	1.1001×2^5
------	---------------------

4. Final Answer

Final Answer

Sum:	1.1001×2^5
------	---------------------

Save to text file

IEEE-754 Binary-32 Floating-Point Addition

First Operand: $\times 2^5$

Second Operand: $\times 2^3$

Choice of Rounding:

- G/R/S
- Round to Nearest - Ties to Even
- Truncate
- Ceiling
- Floor

Digits Supported:

Compute **Clear**

Final Answer: 1.0010×2^5

Operand 1: -1.00111101×2^5
 Operand 2: 1.00111101×2^3

Solution Steps

1. Initial Normalization

Get the two's complement of the negative operand

Operand 1:	0.11000011×2^5
Operand 2:	1.00111101×2^3

Normalize both operands

Operand 1:	0.11000011×2^5
Operand 2:	1.00111101×2^3

Compare the exponents

Operand 1:	0.11000011×2^5
Operand 2:	1.00111101×2^3

Shift the number with smaller exponent to match the larger exponent

Operand 1:	0.11000011×2^5
Operand 2:	0.01001111×2^5

Perform Rounding - Ceiling

Operand 1:	0.11000011×2^5
Operand 2:	0.0101×2^5

2. Operation

Add the two operands

Operand 1:	0.11000011×2^5
Operand 2:	0.0101×2^5
Sum:	1.00011111×2^5

3. Post operation Normalization

Normalize the sum

Sum:	1.00011111×2^5
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Round to the appropriate number of bits using RTN-TE

Sum:	1.0010×2^5
------	---------------------

4. Final Answer

Final Answer

Sum:	1.0010×2^5
------	---------------------

IEEE-754 Binary-32 Floating-Point Addition

First Operand:

-1.00111000 $\times 2^5$

Second Operand:

1.00111000 $\times 2^3$

Choice of Rounding:

- G/R/S
- Round to Nearest - Ties to Even
- Truncate
- Ceiling
- Floor

Digits Supported:

5

Compute

Clear

Final Answer: 1.0010×2^5

Operand 1: -1.00111000 $\times 2^5$
 Operand 2: 1.00111000 $\times 2^3$

Solution Steps

1. Initial Normalization

Get the two's complement of the negative operand

Operand 1: 0.11001000 $\times 2^5$
 Operand 2: 1.00111000 $\times 2^3$

Normalize both operands

Operand 1: 0.11001000 $\times 2^5$
 Operand 2: 1.00111000 $\times 2^3$

Compare the exponents

Operand 1: 0.11001000 $\times 2^5$
 Operand 2: 1.00111000 $\times 2^3$

Shift the number with smaller exponent to match the larger exponent

Operand 1: 0.11001000 $\times 2^5$
 Operand 2: 0.01001110 $\times 2^5$

Perform Rounding - Ceiling

Operand 1: 0.11001000 $\times 2^5$
 Operand 2: 0.0101 $\times 2^5$

2. Operation

Add the two operands

Operand 1: 0.11001000 $\times 2^5$
 Operand 2: 0.0101 $\times 2^5$
 Sum: 1.00011111 $\times 2^5$

3. Post operation Normalization

Normalize the sum

Sum: 1.00011111 $\times 2^5$

Round to the appropriate number of bits using RTN-TE

Sum: 1.0010 $\times 2^5$

4. Final Answer

Final Answer

1.0010 $\times 2^5$

IEEE-754 Binary-32 Floating-Point Addition

First Operand:

100.111101 $\times 2^5$

Second Operand:

100111.101 $\times 2^3$

Choice of Rounding:

- G/R/S
- Round to Nearest - Ties to Even
- Truncate
- Ceiling
- Floor

Digits Supported:

5

Compute

Clear

Final Answer: 1.1110×2^8

Operand 1: 100.111101 $\times 2^5$
 Operand 2: 100111.101 $\times 2^3$

Solution Steps

1. Initial Normalization

Normalize both operands

Operand 1: 1.00111101 $\times 2^7$
 Operand 2: 1.00111101 $\times 2^8$

Compare the exponents

Operand 1: 1.00111101 $\times 2^7$
 Operand 2: 1.00111101 $\times 2^8$

Shift the number with smaller exponent to match the larger exponent

Operand 1: 0.10011110 $\times 2^8$
 Operand 2: 1.00111101 $\times 2^8$

Perform Rounding - Ceiling

Operand 1: 0.1010 $\times 2^8$
 Operand 2: 1.0100 $\times 2^8$

2. Operation

Add the two operands

Operand 1: 0.1010 $\times 2^8$
 Operand 2: 1.0100 $\times 2^8$
 Sum: 1.1110 $\times 2^8$

3. Post operation Normalization

Normalize the sum

Sum: 1.1110 $\times 2^8$

Round to the appropriate number of bits using RTN-TE

Sum: 1.1110 $\times 2^8$

4. Final Answer

Final Answer

Save to text file

IEEE-754 Binary-32 Floating-Point Addition

First Operand: $\times 2^5$

Second Operand: $\times 2^{-3}$

Choice of Rounding: G/R/S
 Round to Nearest - Ties to Even
 Truncate
 Ceiling
 Floor

Digits Supported:

Compute **Clear**

Final Answer: 1.0101×2^7

Operand 1: 100.111101×2^5
 Operand 2: 100111.101×2^{-3}

Solution Steps

1. Initial Normalization

Normalize both operands

Operand 1:	1.00111101×2^7
Operand 2:	1.00111101×2^2

Compare the exponents

Operand 1:	1.00111101×2^7
Operand 2:	1.00111101×2^2

Shift the number with smaller exponent to match the larger exponent

Operand 1:	1.00111101×2^7
Operand 2:	0.00001001×2^7

Perform Rounding - Ceiling

Operand 1:	1.0100×2^7
Operand 2:	0.0001×2^7

2. Operation

Add the two operands

Operand 1:	1.0100×2^7
Operand 2:	0.0001×2^7
Sum:	1.0101×2^7

3. Post operation Normalization

Normalize the sum

Sum:	1.0101×2^7
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Round to the appropriate number of bits using RTN-TE

Sum:	1.0101×2^7
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4. Final Answer

Final Answer

Sum:	1.0101×2^7
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Save to text file

IEEE-754 Binary-32 Floating-Point Addition

First Operand: $\times 2^5$

Second Operand: $\times 2^{-3}$

Choice of Rounding: G/R/S
 Round to Nearest - Ties to Even
 Truncate
 Ceiling
 Floor

Digits Supported:

Compute **Clear**

Final Answer: 0.1110×2^7

Operand 1: -100.111101×2^5
 Operand 2: 100111.101×2^{-3}

Solution Steps

1. Initial Normalization

Get the two's complement of the negative operand

Operand 1:	011000011×2^5
Operand 2:	100111101×2^{-3}

Normalize both operands

Operand 1:	0.11000011×2^7
Operand 2:	1.00111101×2^2

Compare the exponents

Operand 1:	0.11000011×2^7
Operand 2:	1.00111101×2^2

Shift the number with smaller exponent to match the larger exponent

Operand 1:	0.11000011×2^7
Operand 2:	0.00001001×2^7

Perform Rounding - Ceiling

Operand 1:	0.11000011×2^7
Operand 2:	0.0001×2^7

2. Operation

Add the two operands

Operand 1:	0.11000011×2^7
Operand 2:	0.0001×2^7
Sum:	0.11011111×2^7

3. Post operation Normalization

Normalize the sum

Sum:	0.11011111×2^7
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Round to the appropriate number of bits using RTN-TE

Sum:	0.1110×2^7
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4. Final Answer

Final Answer

Sum:	0.1110×2^7
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IEEE-754 Binary-32 Floating-Point Addition

First Operand: -100.111101

$\times 2^{+5}$

Second Operand: -100111.101

$\times 2^{-3}$

Choice of Rounding:

- G/R/S
- Round to Nearest - Ties to Even
- Truncate
- Ceiling
- Floor

Digits Supported:

5

Compute

Clear

Final Answer: -1.0100×2^7

Operand 1: -100.111101

$\times 2^{+5}$

Operand 2: -100111.101

$\times 2^{-3}$

Solution Steps

1. Initial Normalization

Normalize both operands

Operand 1: -1.00111101 $\times 2^{+7}$
Operand 2: -1.00111101 $\times 2^{+2}$

Compare the exponents

Operand 1: -1.00111101 $\times 2^{+7}$
Operand 2: -1.00111101 $\times 2^{+2}$

Shift the number with smaller exponent to match the larger exponent

Operand 1: -1.00111101 $\times 2^{+7}$
Operand 2: -0.00001001 $\times 2^{+7}$

Perform Rounding - Ceiling

Operand 1: -1.00111101 $\times 2^{+7}$
Operand 2: -0.0000 $\times 2^{+7}$

2. Operation

Add the two operands

Operand 1: -1.00111101 $\times 2^{+7}$
Operand 2: -0.0000 $\times 2^{+7}$
Sum: -1.00111111 $\times 2^{+7}$

3. Post operation Normalization

Normalize the sum

Sum: -1.00111111 $\times 2^{+7}$

Round to the appropriate number of bits using RTN-TE

Sum: -1.0100 $\times 2^7$

4. Final Answer

Final Answer

-1.0100×2^7

Save to text file

IEEE-754 Binary-32 Floating-Point Addition

First Operand: 1.00111101

$\times 2^{+5}$

Second Operand: 1.00111101

$\times 2^{+3}$

Choice of Rounding:

- G/R/S
- Round to Nearest - Ties to Even
- Truncate
- Ceiling
- Floor

Digits Supported:

3

Compute

Clear

Final Answer: 1.11×2^5

Operand 1: 1.00111101

$\times 2^{+5}$

Operand 2: 1.00111101

$\times 2^{+3}$

Solution Steps

1. Initial Normalization

Normalize both operands

Operand 1: 1.00111101 $\times 2^{+5}$
Operand 2: 1.00111101 $\times 2^{+3}$

Compare the exponents

Operand 1: 1.00111101 $\times 2^{+5}$
Operand 2: 1.00111101 $\times 2^{+3}$

Shift the number with smaller exponent to match the larger exponent

Operand 1: 1.00111101 $\times 2^{+5}$
Operand 2: 0.01001111 $\times 2^{+5}$

Perform Rounding - Ceiling

Operand 1: 1.01 $\times 2^{+5}$
Operand 2: 0.10 $\times 2^{+5}$

2. Operation

Add the two operands

Operand 1: 1.01 $\times 2^{+5}$
Operand 2: 0.10 $\times 2^{+5}$
Sum: 1.11 $\times 2^{+5}$

3. Post operation Normalization

Normalize the sum

Sum: 1.11 $\times 2^{+5}$

Round to the appropriate number of bits using RTN-TE

Sum: 1.11 $\times 2^{+5}$

4. Final Answer

Final Answer

1.11×2^5

Save to text file