

CHAPTER 2

OPERATIONS BINARY



$$3 - 3 = 12$$

$$4 - 4 = 20$$

$$5 - 5 = 40$$

$$8 - 8 = ??$$

SEARCH

DISCUSS

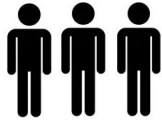
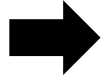
CONTEST



30 MIN



INDIV



GROUP 3

20 MIN

1 Individually, **search on internet** how to:

- Add 2 binary numbers
- Add 3 or 4 binary numbers
- Subtract 2 binary numbers

10 MIN

2 **Share your strategy** with your team

30MIN

3 **Competition**





30 MIN

BINARY CODE COMPETITION



Q1

$$\begin{array}{r} 01101001 \\ + 00010100 \\ \hline \end{array}$$

A 01111011

B 01101111

C 01111101

D 01101101

Q1

$$\begin{array}{r} 01101001 \\ + 00010100 \\ \hline \end{array}$$

A 01111011

B 01101111

☒ C 01111101

D 01101101

Q2

$$\begin{array}{r} 10001000 \\ + 00001000 \\ \hline \end{array}$$

A 10010000

B 10001000

C 10000100

D 10100000

Q2

$$\begin{array}{r} 10001000 \\ + 00001000 \\ \hline \end{array}$$

☒ A 10010000

☐ B 10001000

☐ C 10000100

☐ D 10100000

Q3

$$\begin{array}{r} 01011010 \\ + 01001000 \\ \hline \end{array}$$

A 10010000

B 10011010

C 10010101

D 10100010

Q3

$$\begin{array}{r} 01011010 \\ + 01001000 \\ \hline \end{array}$$

A 10010000

B 10011010

C 10010101

☒ D 10100010

Q4

$$\begin{array}{r} 01010110 \\ + 01001110 \\ \hline \end{array}$$

A 10100100

B 10010100

C 11000100

D 01011110

Q4

$$\begin{array}{r} 01010110 \\ + 01001110 \\ \hline \end{array}$$



A

10100100

B

10010100

C

11000100

D

01011110

Q5

$$\begin{array}{r} 0000 \ 0111 \\ + 0000 \ 1111 \\ + 0000 \ 1111 \\ \hline \end{array}$$

A 1010 1001 B 0010 1111

C 0011 0101 D 0010 0101

Q5

$$\begin{array}{r} 0000 \quad 0111 \\ + 0000 \quad 1111 \\ + 0000 \quad 1111 \end{array}$$

A 1010 1001 B 0010 1111

C 0011 0101 D 0010 0101

Q6

$$\begin{array}{r} 10110 \\ - 01101 \\ \hline \end{array}$$

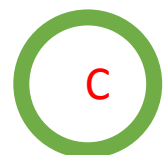
A 0 1 1 0 1 B 1 0 0 0 1

C 0 1 0 0 1 D 1 1 0 0 1

Q6

$$\begin{array}{r} 10110 \\ - 01101 \\ \hline \end{array}$$

A 0 1 1 0 1 B 1 0 0 0 1

 C 0 1 0 0 1 D 1 1 0 0 1

Q7

$$\begin{array}{r} 11111 \\ - 01010 \\ \hline \end{array}$$

A 110111

B 101011

C 10111

D 10101

Q7

$$\begin{array}{r} 11111 \\ - 01010 \\ \hline \end{array}$$

A 110111

B 101011

C 10111

☒ D 10101

Q8

$$\begin{array}{r} 10011 \\ - 01000 \\ \hline \end{array}$$

A 110011

B 001011

C 010011

D 101011

Q8

$$\begin{array}{r} 10011 \\ - 01000 \\ \hline \end{array}$$

A 110011

☒ B 001011

C 010011

D 101011

Q9

$$\begin{array}{r} 00111 \\ 00010 \\ - 00001 \\ \hline \end{array}$$

A 00100

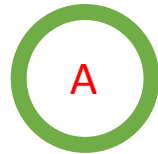
B 01000

C 010010

D 001010

Q9

$$\begin{array}{r} 00111 \\ 00010 \\ - 00001 \\ \hline \end{array}$$



A

00100

B

01000

C

010010

D

001010

Q10

$$\begin{array}{r} 01111 \\ 00101 \\ - 00011 \\ \hline \end{array}$$

A 10111

B 01011

C 010110

D 00111

Q10

$$\begin{array}{r} 01111 \\ 00101 \\ - 00011 \\ \hline \end{array}$$

A 10111

B 01011

C 010110

 D 00111

Q11

11111

01011

00101

- 00001

A 101110

B 011010

C 001110

D 011100

Q12

11111

01011

00101

- 00001

A 101110

B 011010

☒ C 001110

D 011100



INDIV

- ✓ Select a **topic**
- ✓ Make **researches** on it
- ✓ **Explain it to others** the next time

HOW TO
ENCODE
NEGATIVE NUMBERS
IN BINARY ?

HOW TO
MULTIPLY
2
BINARY NUMBERS ?

HOW TO
ENCODE
FLOAT NUMBERS
IN BINARY ?