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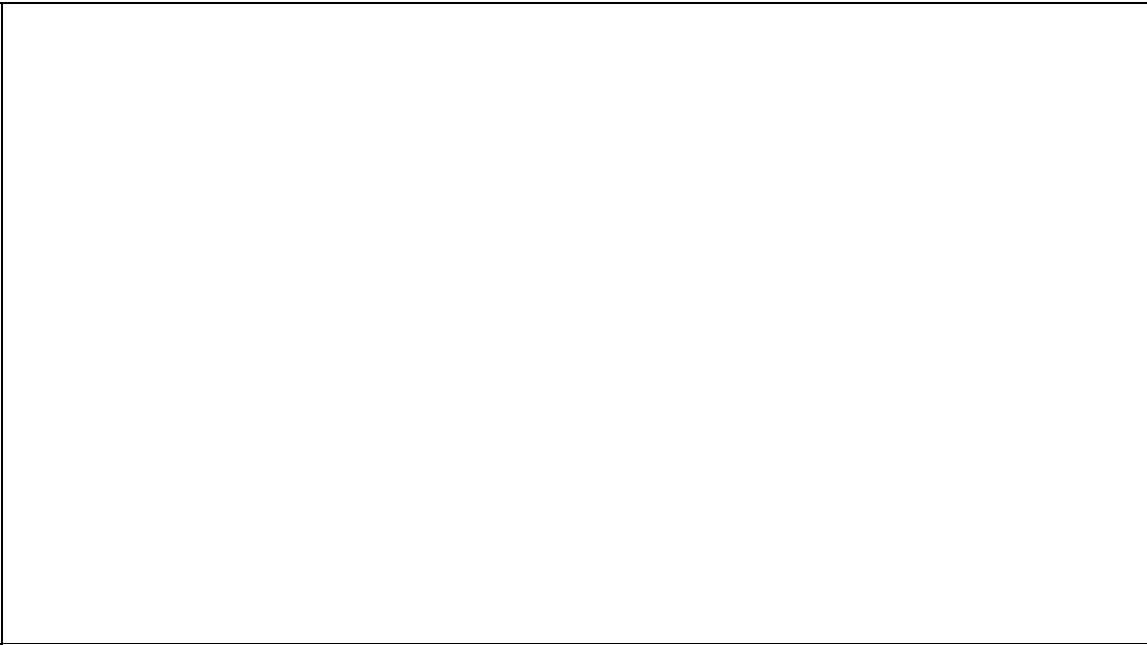
How to Use Jade

TWO'S COMPLEMENT

6:23 / 6:23   **1.0x**

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1. CHECK YOUR UNDERSTANDING

Consider the two's complement number 10001.

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1 A. CHECK YOUR UNDERSTANDING (1/1 point)

What is the decimal value of the number?

- ○ -17
- ● -15 ✔
- ○ 15
- ○ 17

EXPLANATION

$-(2^4) + 2^0 = -16 + 1 = -15$.

| Final Check | **Save** | Hide Answer | *You have used 1 of 2 submissions* |

1 B.CHECK YOUR UNDERSTANDING (1/1 point)

What is the two's complement of the number?

- ◉ 01111 ✔
- ○ 01110
- ○ 01100
- ○ 10000

EXPLANATION

Copy the first 1 and invert the remaining bits: 01111.

| Final Check | **Save** | Hide Answer | *You have used 1 of 2 submissions* |

2. CHECK YOUR UNDERSTANDING (1/1 point)

What is the range of a 6 bit two's complement number?

- ○ -16 to 15
- ○ -16 to 16
- ◉ -32 to 31 ✔
- ○ -32 to 32

EXPLANATION

-(2^5) to (2^5 – 1) or -32 to 31.

| Hide Answer | *You have used 2 of 2 submissions* |

3. CHECK YOUR UNDERSTANDING (1/1 point)

What is the result in decimal of adding the two's complement values 111 and 011?

- ○ -6
- ○ 0
- ◉ 2 ✔
- ○ 10

EXPLANATION

```
   11
  111
+ 011
  010
```

The carry out of the MSB is ignored.

Help

Final Check   **Save**   Hide Answer   *You have used 1 of 2 submissions*

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