

## Verilog operators

### • Arithmetic

$a + b$	plus
$a - b$	minus
$a * b$	multiplied
$a / b$	divided
$a \% b$	modulo
$a ** b$	power of b

### • Relational

$a < b$	less than
$a > b$	greater than
$a <= b$	less than equals to
$a >= b$	more than equals to

### • Equality

$a == b$	a equal to b, including x and z
$a != b$	a not equal to b, including x and z
$a === b$	a equal to b, result unknown
$a !== b$	a not equal to b, result unknown

### • Shift

- Logical Shift :  $<<$  and  $>>$
- Arithmetic Shift :  $<<<$  and  $>>>$



## • logical

$a \& \& b$  (evaluates to true if a and b are true)

$a \parallel b$  (evaluates to true if a or b are true)

$!a$  (converts non-zero to zero, and vice versa)

$x$  will remain  $x$

## • Bitwise

This operator will combine a bit in one operand with its corresponding bit in the other operand to calculate a single bit result.

$\&$	0	1	$x$	$z$
0	0	0	0	0
1	0	1	$x$	$x$
$x$	0	$x$	$x$	$x$
$z$	0	$x$	$x$	$x$

$ $	0	1	$x$
0	0	1	$x$
1	1	1	1
$x$	$x$	1	$x$
$z$	$x$	1	$x$