

## 3.2.A Classical Operations Prerequisites

1. Is the AND gate reversible? Why/why not?
2. Create a reversible AND gate. Draw out the truth table.

### Answers

1. The AND gate is not reversible as if it returns 0, we don't know the input for certain. It could have been 00, 01 or 10.

2.

$x_0$	$x_1$	$c$	$x_0$	$x_1$	$c \oplus f(x_0, x_1)$
0	0	0	0	0	0
0	0	1	0	0	1
0	1	0	0	1	0
0	1	1	0	1	1
1	0	0	1	0	0
1	0	1	1	0	1
1	1	0	1	1	1
1	1	1	1	1	0