

Boolean Logic

+ Inventor

- George Boole

- 1815 – 1864
- Look him up on Wikipedia

- Basic Operations

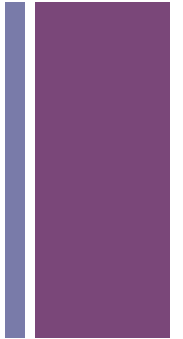
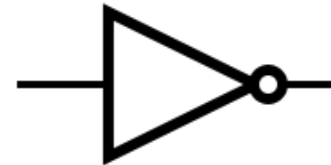
- AND



- OR



- NOT



+ Truth Tables

A	B	A and B	A or B	not A
True	True	True	True	False
True	False	False	True	False
False	True	False	True	True
False	False	False	False	True

Note the slight difference in pattern between AND vs. OR.

True AND True = TRUE

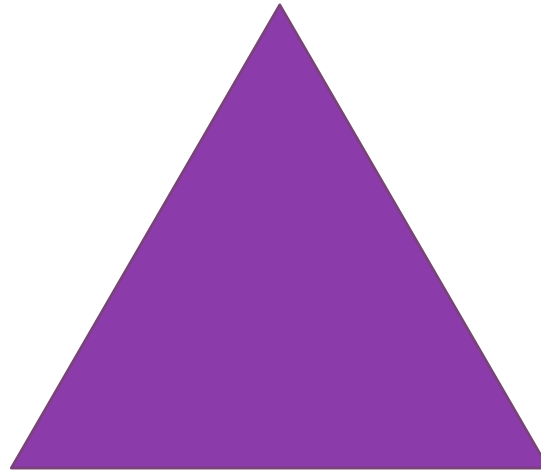
True OR True = TRUE

False AND False = FALSE

False OR False = FALSE

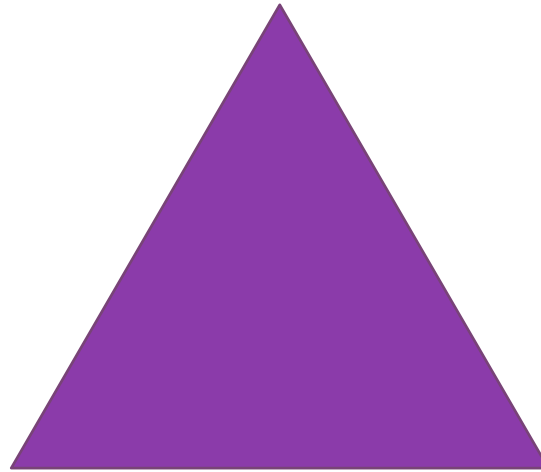
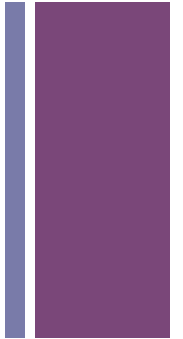
It is the lines in the middle that differ.

+ Is it purple AND a triangle?



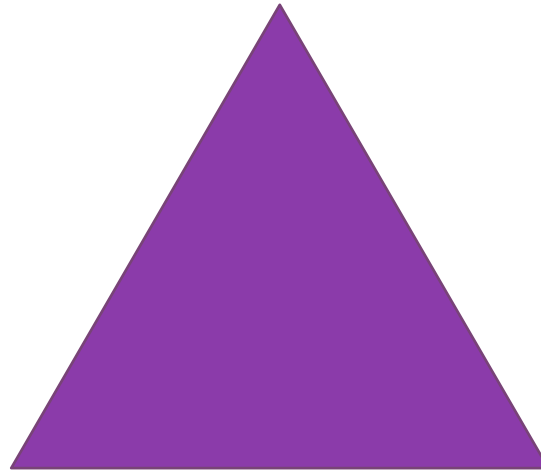
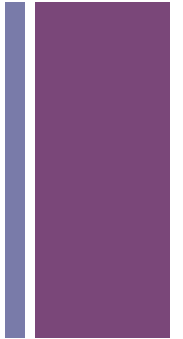
Purple	Triangle	Purple AND Triangle
True	True	True
True	False	False
False	True	False
False	False	False

+ Is it purple OR a triangle?



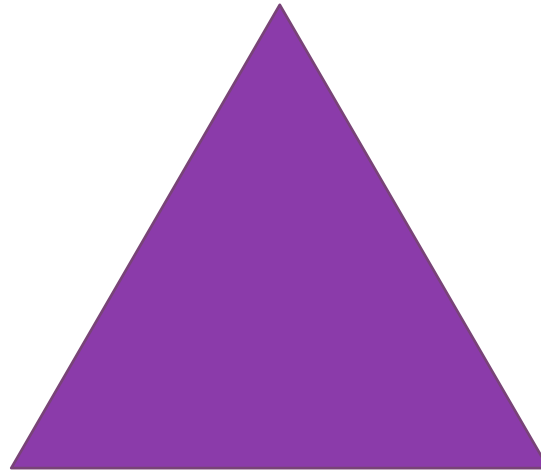
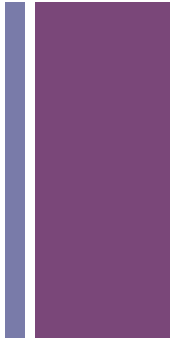
Purple	Triangle	Purple OR Triangle
True	True	True
True	False	True
False	True	True
False	False	False

+ Is it purple AND a circle?



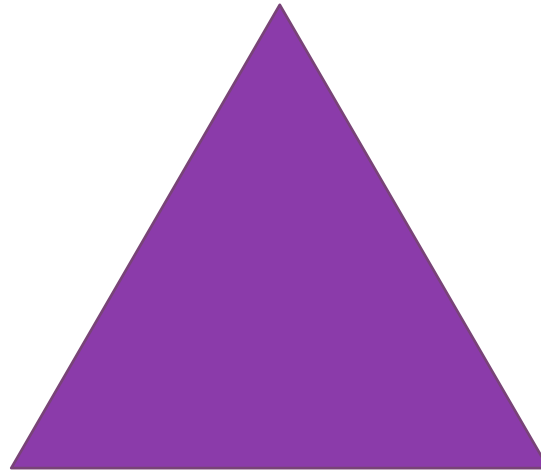
Purple	Circle	Purple AND Circle
True	True	True
True	False	False
False	True	False
False	False	False

+ Is it purple OR a circle?



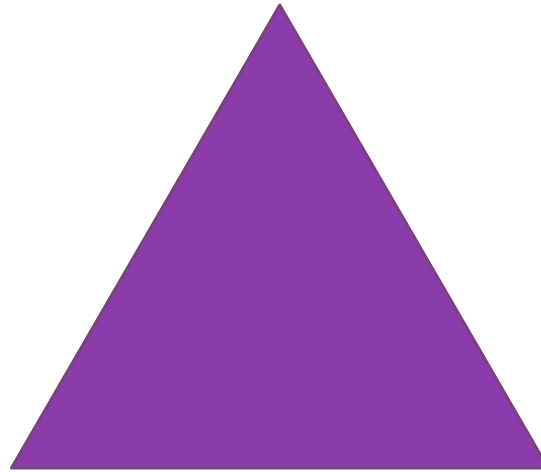
Purple	Circle	Purple OR Circle
True	True	True
True	False	True
False	True	True
False	False	False

+ Is it yellow OR a circle?



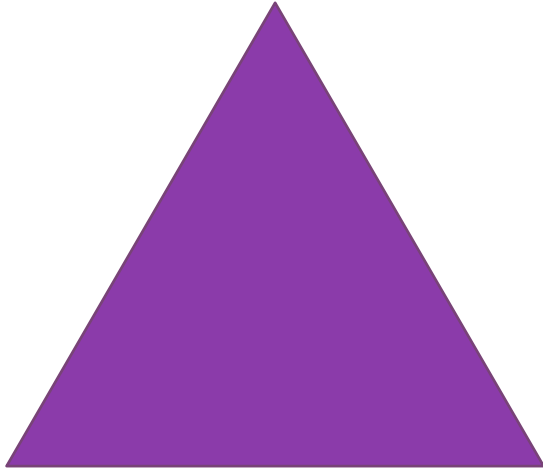
Yellow	Circle	Yellow OR Circle
True	True	True
True	False	True
False	True	True
False	False	False

+ Is it yellow AND a circle?



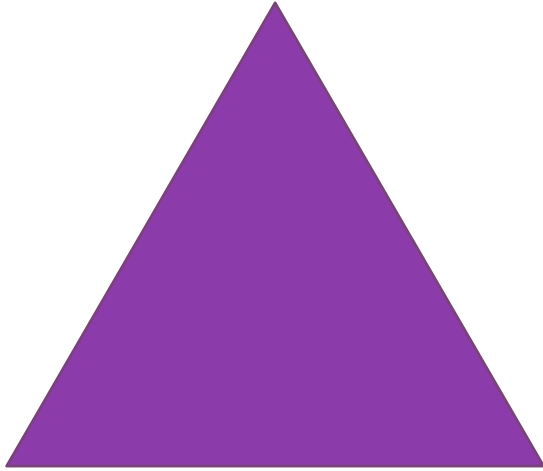
Yellow	Circle	Yellow AND Circle
True	True	True
True	False	False
False	True	False
False	False	False

+ Is it NOT yellow?



Yellow	NOT Yellow
True	False
False	True

+ Is it NOT purple?



Purple	NOT Purple
True	False
False	True



Follow Up Topics

Where would you look these up?

- Logic Gates
- NOR Gate
- Flip Flop
- Dynamic RAM = Random-Access Memory
- Static RAM
- ROM = Read-Only Memory
- EPROM = Erasable Programmable ROM

