Proof by Cases

Case 1: x > 0

true

if ((x>0) || (x <= 0 && y>100))

OR

AND

true

if ((x>0) || y>100)

OR

so both are true

Case 2: x ≤ 0

false

if ((x>0) || (x <= 0 && y>100))

OR

AND

false

if ((x>0) || y>100)

Java Logical Expression

if ((x>0) || (x <= 0 && y>100))

OR

AND

(more code)

better: if ((x>0) || y>100)

(more code)

Case 2: x ≤ 0

if (y>100)

so both still the same
Proof by Cases

Reasoning by cases can break a complicated problem into easier subproblems. Some philosophers* think reasoning this way is worrisome.

*intuitionists

$1,000,000 Question

Is \( P = NP \)?

$1,000,000 Question

The answer is on my desk!
(Proof by Cases)