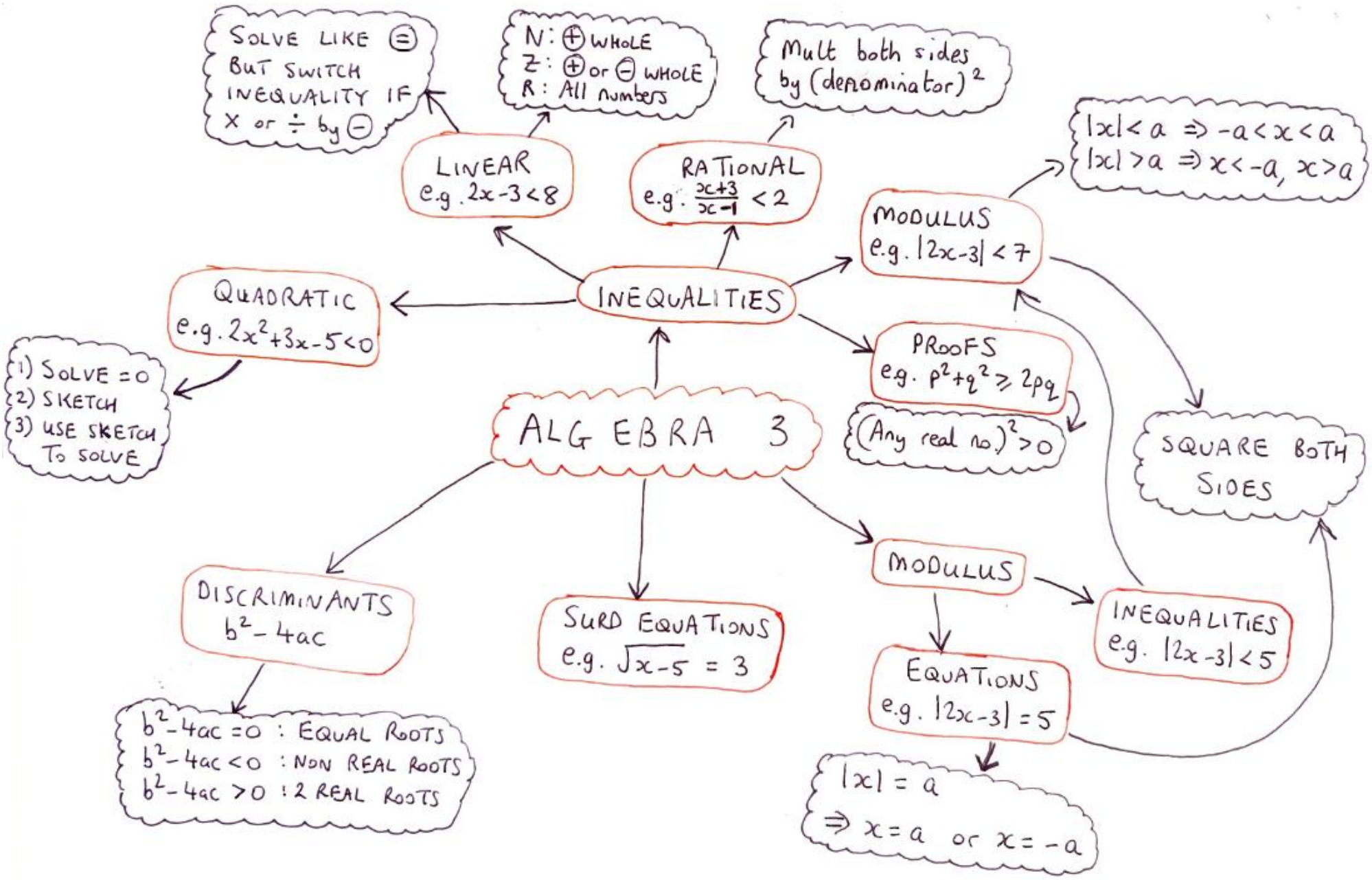
ALGEBRA 3
INEQUALITIES
LINEAR
e.g. 2x-3<8
Solve like (=)
But switch inequality if x or ÷ by (-)
N: (+) whole
Z: (+) or (-) whole
R: All numbers
RATIONAL
e.g. (x+3)/(x-1) < 2
Mult both sides by (denominator)²
QUADRATIC
e.g. 2x²+3x-5<0
1) Solve =0
2) Sketch
3) Use sketch to solve
MODULUS
e.g. |2x-3| < 7
|x|<a ⇒ -a<x<a
|x|>a ⇒ x<-a, x>a
PROOFS
e.g. p²+q² ≥ 2pq
(Any real no.)² ≥ 0
SQUARE BOTH SIDES
DISCRIMINANTS
b²-4ac
b²-4ac =0 : Equal roots
b²-4ac <0 : Non real roots
b²-4ac >0 : 2 real roots
SURD EQUATIONS
e.g. √(x-5) = 3
MODULUS
EQUATIONS
e.g. |2x-3| = 5
|x| = a
⇒ x = a or x = -a
INEQUALITIES
e.g. |2x-3| < 5