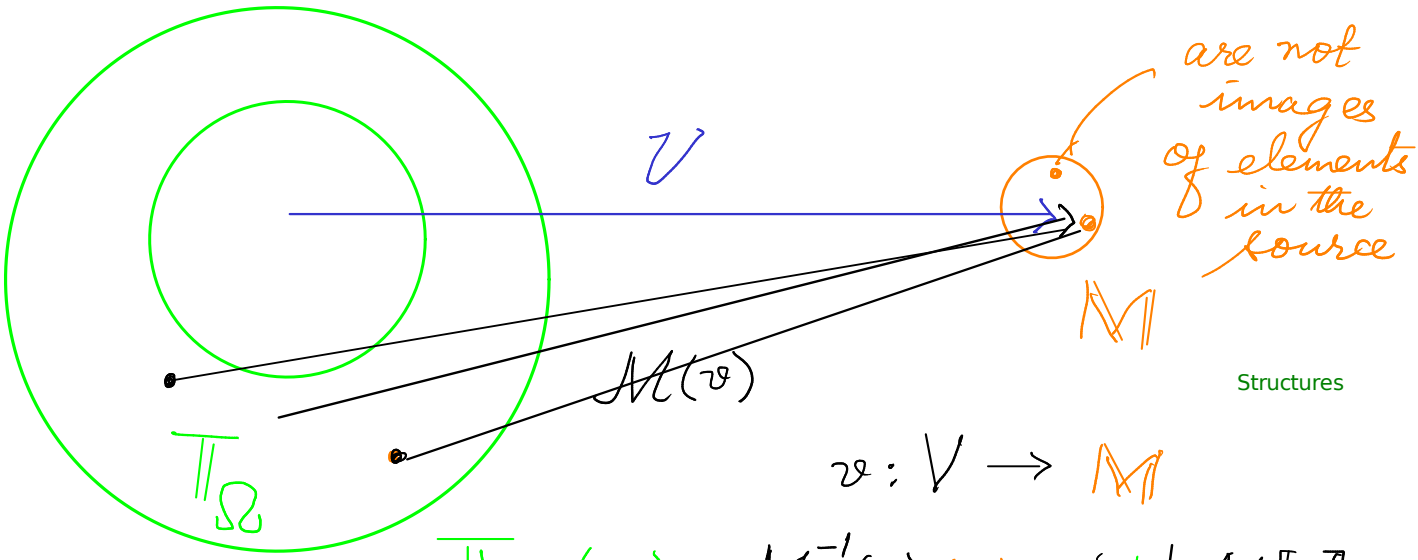
L04: Semantics & Syntactic substitutions

1. Similar signatures
2. Similar algebras
3. Semantics: homomorphism from terms of a formal language to terms of a model expressed as terms in a similar algebra
4. Syntactic substitutions: syntactic replacement of variables by terms
5. Rewrites: syntactic replacement of terms by terms



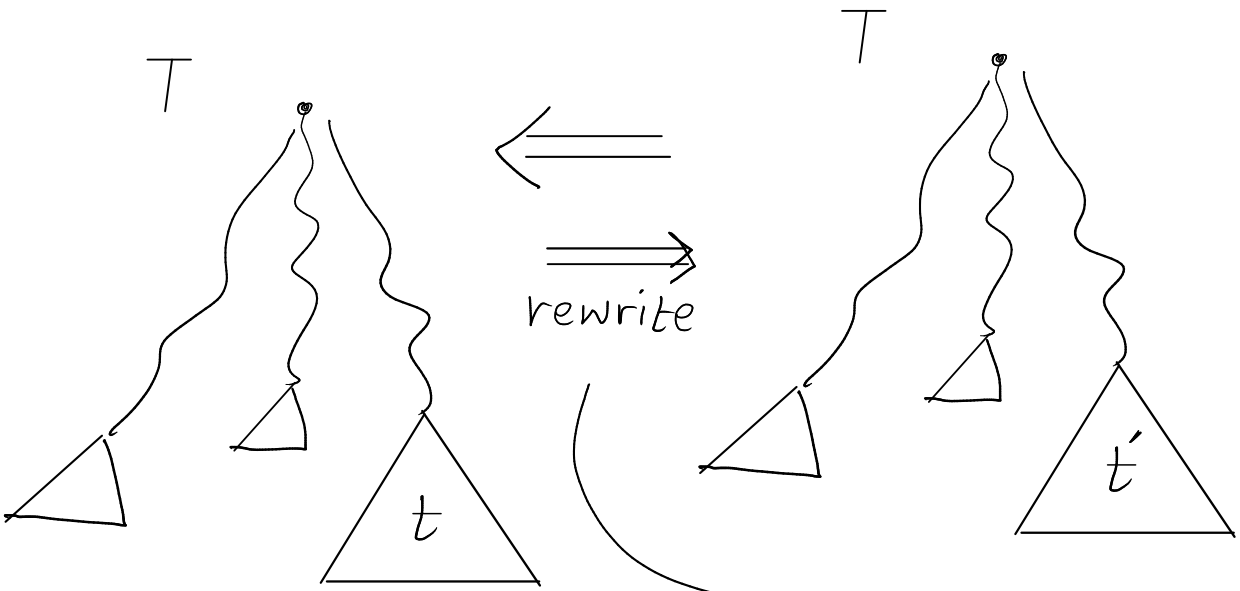
$v : V \to \mathbb{M}$

$\mathcal{M}^{-1}(v)(m) = \{t \mid \mathcal{M}[\![t]\!]_v = m\}$

$\mathcal{M}^{-1} : (V \to \mathbb{M}) \to 2^{T_\Omega(V)}$

$t \neq t'$

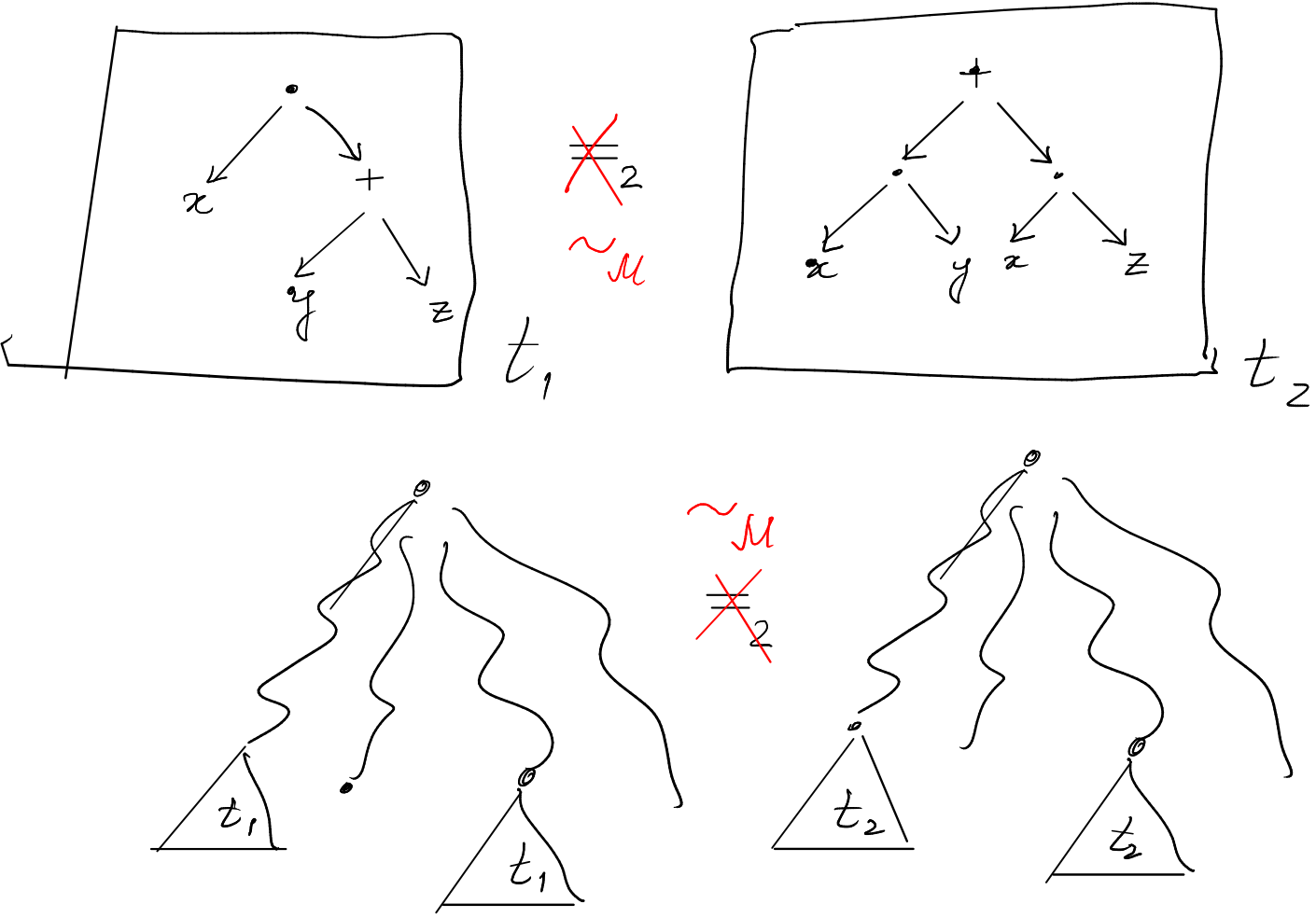
$t =_2 t'$



$t \neq t'$ but $t =_2 t'$

identity — algebraic identities

$x \cdot (y+z) = x \cdot y + x \cdot z$



dequeue(enqueue (q, x)) = enqueue (dequeue (q), x))
dequeue(enquue ([emptyq, x)) = emptyq