Why

How does the number of elements change with unions, and products.

Results

There are a few nice relations.[1] Recall from Finite Sets that the union and product of finite sets is finite. Also, the power of a finite set is finite.

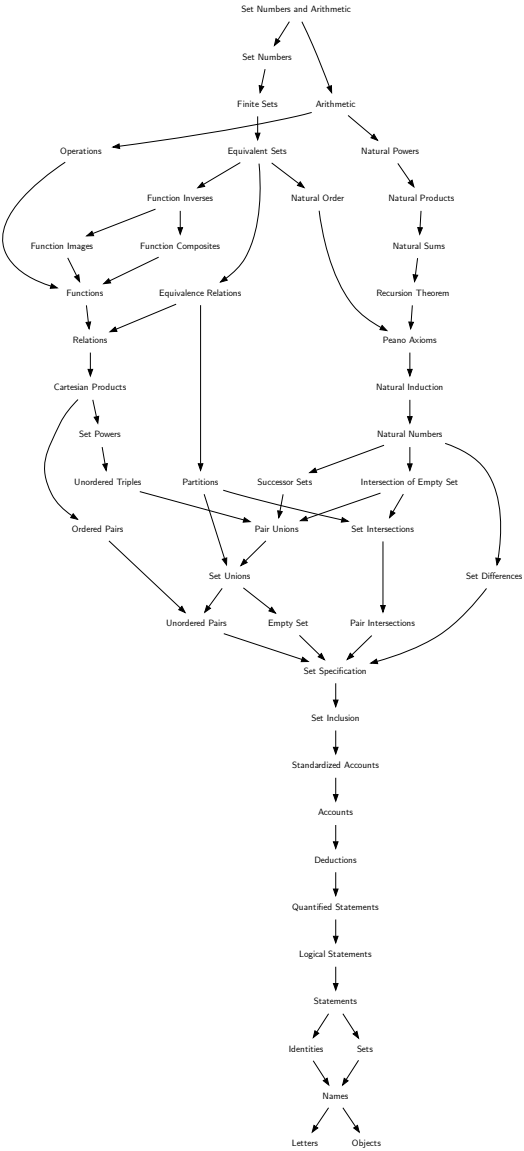
Proposition 1. *Let A and B be finite sets with $A \cap B = \varnothing$. Then $|A \cup B| = |A| + |B|$.*

Proposition 2. *Let A and B be a finite sets Then $|A \times B| = |A| \cdot |B|$.*

Proposition 3. *Let A and B be a finite sets Then $\left|A^B\right| = |A|^{|B|}$.*

Proposition 4. *Let A be a finite set. Then $|\mathcal{P}(A)| = 2^{|A|}$.*

[1] Proofs will appear in future editions.


Set Numbers and Arithmetic
Set Numbers
Finite Sets
Arithmetic
Operations
Equivalent Sets
Natural Powers
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Natural Order
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Function Images
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Successor Sets
Intersection of Empty Set
Ordered Pairs
Pair Unions
Set Intersections
Set Unions
Set Differences
Unordered Pairs
Empty Set
Pair Intersections
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