



Math for the people, by the people.

coloring

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A *coloring* of a set X by Y is just a function $f : X \rightarrow Y$. The term coloring is used because the function can be thought of as assigning a “color” from Y to each element of X .

Any coloring provides a partition of X : for each $y \in Y$, $f^{-1}(y)$, the set of elements x such that $f(x) = y$, is one element of the partition. Since f is a function, the sets in the partition are disjoint, and since it is a total function, their union is X .