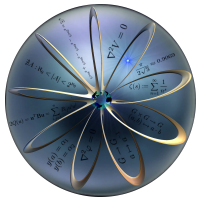

# planetmath.org

Math for the people, by the people.

## compactification

| | |
|---|---|
| Canonical name | Compactification |
| Date of creation | 2013-03-22 12:15:42 |
| Last modified on | 2013-03-22 12:15:42 |
| Owner | Evandar (27) |
| Last modified by | Evandar (27) |
| Numerical id | 8 |
| Author | Evandar (27) |
| Entry type | Definition |
| Classification | msc 54D35 |
| Synonym | Hausdorff compactification |
| Related topic | Compact |
| Related topic | AlexandrovOnePointCompactification |

Let $X$ be a topological space. A (Hausdorff) compactification of $X$ is a pair $(K, h)$ where $K$ is a Hausdorff topological space and $h : X \to K$ is a continuous function such that

- $K$ is compact
- $h$ is a homeomorphism between $X$ and $h(X)$
- $\overline{h(X)}^K = K$ where $\overline{A}^K$ denotes closure in $K$ for any subset $A$ of $K$

$h$ is often considered to be the inclusion map, so that $X \subseteq K$ with $\overline{X}^K = K$.