



Math for the people, by the people.

surface

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A *surface* is a two-dimensional topological manifold. A closed surface is a surface without boundary.

A result called the “classification theorem” gives us a symbolic semantics, matching the geometrical view point, in terms of genera, orientability and number of boundary components. Together with the connected sum operation, they make available a powerful language to be explored and exploited.

As an example of a surface take  $T = S^1 \times S^1$  the two torus, the boundary of a solid sugar donut shaped cake  $D^2 \times S^1$ , where  $S^1$  is the familiar modulus one complex numbers.