Gauss-Bonnet theorem for surfaces without boundary

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Owner	Simone (5904)
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Author	Simone (5904)
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If S is a compact, orientable surface without boundary, then

$$\int_S K = 2\pi\,\chi(S),$$

where K is the Gaussian curvature of S and $\chi(S)$ its `http://planetmath.org/EulerrCharacteris`
Poincaré characteristic.