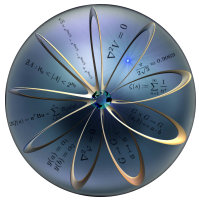

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place as extension of homomorphism

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Theorem. If f is a ring homomorphism from a subring $\mathfrak{o}$ of a field k to an algebraically closed field F such that $f(1) = 1$, then there exists a `http://planetmath.org/PlaceOfField`place

$$\varphi : k \to F \cup \{\infty\}$$

of the field k such that

$$\varphi|_{\mathfrak{o}} = f.$$

Note. That F should be algebraically closed, does not , since every field is extendable to such one.

References

[1] Emil Artin: . Lecture notes. Mathematisches Institut, Göttingen (1959).