```
⊛[K_] := Module[{Cs, φ, n, A, Δ, G, ev, Θ},
  {Cs, φ} = Rot[K]; n = Length[Cs];
  A = IdentityMatrix[2 n + 1];
  Cases[Cs, {s_, i_, j_} :>
    (A[[{i, j}, {i + 1, j + 1}]] += ({{-T^s, T^s - 1}, {0, -1}}))];
  Δ = T^((-Total[φ]-Total[Cs[[All,1]]])/2) Det[A];
  G = Inverse[A];
  ev[ℰ_] :=
   Factor[ℰ /. g_ν_,α_,β_ :> (G[[α, β]] /. T -> T_ν)];
  Θ = ev[∑_{k1=1}^n ∑_{k2=1}^n R12[Cs[[k1]], Cs[[k2]]]];
  Θ += ev[∑_{k=1}^n R11[Cs[[k]]]];
  Θ += ev[∑_{k=1}^{2 n} Γ1[φ[[k]], k]];
  Factor@
   {Δ, (Δ /. T -> T1) (Δ /. T -> T2) (Δ /. T -> T3) Θ}];
```