STABILITY In Section 4.4 we investigated some of the features of consistent and conver– gent finite 45 difference approximations as they related to the model parabolic Stability PDE Now we consider the stability of these approximations. This feature of numerical analysis has basically nothing to do with the PDE but rather concerns the unstable growth or stable decay of errors in the arithmetic operations needed to solve the finite difference equations themselves. Although there is a theoretically exact solution to any one of the finite difference approximations, because of round–off error in the computer, errors are com mitted as the explicit calculation is carried out. If an approximation is stable, then we are assured that computational errors can, in principle, be made arbitrarily small. Whether these errors amplify or decay characterizes the stability property of the scheme.