

TABLE PT2.2 Specific study objectives for Part Two.

1. Understand the graphical interpretation of a root
 2. Know the graphical interpretation of the false-position method and why it is usually superior to the bisection method
 3. Understand the difference between bracketing and open methods for root location
 4. Understand the concepts of convergence and divergence; use the two-curve graphical method to provide a visual manifestation of the concepts
 5. Know why bracketing methods always converge, whereas open methods may sometimes diverge
 6. Realize that convergence of open methods is more likely if the initial guess is close to the true root
 7. Understand the concepts of linear and quadratic convergence and their implications for the efficiencies of the fixed-point-iteration and Newton-Raphson methods
 8. Know the fundamental difference between the false-position and secant methods and how it relates to convergence
 9. Understand the problems posed by multiple roots and the modifications available to mitigate them
 10. Know how to extend the single-equation Newton-Raphson approach to solve systems of nonlinear equations
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