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EX.1.4.7, Sauer3

Let  $f(x) = x^4 - 7x^3 + 18x^2 - 20x + 8$ . Does Newton's Method converge quadratically to the root r = 2? Find  $\lim_{i \to \infty} e_{i+1}/e_i$ , where  $e_i$  denotes the error at step i.