

$$f(x) = x^2 - 3$$

$$\underline{x_0 = 1.65}$$

$$e_0 < \frac{1}{M}$$

$$x_1 = 1.7 \rightarrow 7.3 \times 10^{-2}$$

$$x_2 = 1.7328 \rightarrow 7.9 \times 10^{-6}$$

$$x_3 = 1.7320 \rightarrow 7.3 \times 10^{-6}$$

$$x_4 = 1.7321 \rightarrow 1.7 \times 10^{-9}$$

$$x_5 = 1.7321 \rightarrow 3.6 \times 10^{-15}$$

$$e_{k+1} \leq M e_k^\alpha$$

Newton's Method  $\alpha = 2$

Secant Method  $\alpha = \frac{1}{2}(1 + \sqrt{5})$

$$\underline{1 < \alpha < 2}$$

$$= 1.62$$