

ALA BLATTNR. **ABGABEDATUM**

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1. a)

$$T_7(x) = 1 - \frac{x^2}{2} + \frac{x^4}{24} - \frac{x^6}{720}$$

$$T_8(x) = 1 - \frac{x^2}{2} + \frac{x^4}{24} - \frac{x^6}{720} + \frac{x^8}{8!}$$

$$T_9(x) = T_8(x)$$

$$T_{10}(x) = 1 - \frac{x^2}{2} + \frac{x^4}{24} - \frac{x^6}{720} + \frac{x^8}{8!} - \frac{x^{10}}{10!}$$

$$T_{11}(x) = T_{10}(x)$$

$$T_{12}(x) = 1 - \frac{x^2}{2} + \frac{x^4}{24} - \frac{x^6}{720} + \frac{x^8}{8!} - \frac{x^{10}}{10!} + \frac{x^{12}}{12!}$$

$$T_{13}(x) = T_{12}(x)$$

$$T_9(1) \approx 0,5403025$$

$$T_{11}(1) \approx 0,5403023$$

$$T_{13}(1) \approx 0,5403023$$

b)

f(x)

$$T_0(x) = 1$$

$$T_1(x) = 1 + \frac{x}{2}$$

$$T_2(x) = 1 + \frac{x}{2} - \frac{x^2}{8}$$

$$T_3(x) = 1 + \frac{x}{2} - \frac{x^2}{8} + \frac{x^3}{16}$$

$$T_4(x) = 1 + \frac{x}{2} - \frac{x^2}{8} + \frac{x^3}{16} - \frac{5x^4}{128}$$

g(x)

$$T_0(x) = 1$$

$$T_1(x) = 1 - \frac{x}{3}$$

$$T_3(x) = 1 - \frac{x}{3} + \frac{2x^2}{9} - \frac{14x^3}{81}$$

$$T_4(x) = 1 - \frac{x}{3} + \frac{2x^2}{9} - \frac{14x^3}{81} + \frac{35x^4}{243}$$

$$T_2(x) = 1 - \frac{x}{3} + \frac{2x^2}{9}$$

c)

2. TODO**3. TODO****4. TODO**