Anhang.

1. Erddimensionen nach Bessel.

Große Halbachse $a = 6377397\,m$ $\lg a = 6.804\,6435$

Kleine Halbachse $b = 6356079\,m$ $\lg b = 6.803\,1894$

Meridianquadrant $A = 10000856 \pm 498\,m$, $\lg A = 7.000\,0372$

Abplattung $p = \frac{a-b}{a} = \frac{1}{299{,}15 \pm 4{,}7}$ $\lg p = 7.524\,1069-10$

Excentricität $e = \sqrt{\frac{a^2-b^2}{a^2}} = 0.081697 \pm 0.000635$ $\lg e = 8.912\,2052-10$

2. Reihen.

$$(1+x)^n = 1 + \frac{n}{1}x + \frac{n}{1}\cdot\frac{n-1}{2}x^2 + \frac{n}{1}\cdot\frac{n-1}{2}\cdot\frac{n-2}{3}x^3 + \dots$$

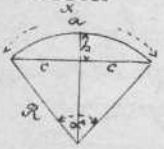
$$\frac{1}{1\pm x} = 1 \mp x + x^2 \mp x^3 + x^4 \mp x^5 \dots$$

$$\sqrt{1\pm x} = 1 \pm \frac{1}{2}x - \frac{1}{8}x^2 \pm \frac{1}{16}x^3 - \frac{5}{128}x^4 \pm \dots$$

$$\frac{1}{\sqrt{1\pm x}} = 1 \mp \frac{1}{2}x + \frac{3}{8}x^2 \mp \frac{5}{16}x^3 + \frac{35}{128}x^4 \mp \dots$$

wenn $1 > x > -1$

$$y = R - \sqrt{R^2 - x^2} = \frac{x^2}{2R} + \frac{x^4}{8R^3} + \frac{x^6}{16R^5} + \frac{5x^8}{128R^7} + \dots$$



$$2R = \frac{c^2}{b} + b; \qquad \lg\frac{\alpha}{2} = \frac{b}{c}$$

$$\frac{\alpha}{R} = 2\left(\frac{b}{c} - \frac{1}{3}\cdot\frac{b^3}{c^3} + \frac{1}{5}\cdot\frac{b^5}{c^5} - \frac{1}{7}\cdot\frac{b^7}{c^7} + \dots\right)$$

$$a = 2c + 4c\left(\frac{b^2}{1\cdot3\,c^2} - \frac{b^4}{3\cdot5\,c^4} + \frac{b^6}{5\cdot7\,c^6} - \dots\right)$$

$$a^x = e^{x\,la} = 1 + \frac{x\,la}{1} + \frac{(x\,la)^2}{1\cdot2} + \frac{(x\,la)^3}{1\cdot2\cdot3} \dots \qquad la = \lg nat$$

$$l(1\pm x) = \pm x - \frac{x^2}{2} \pm \frac{x^3}{3} - \frac{x^4}{4} \pm \dots \quad \text{wenn } x < 1$$

$$l\,\frac{u}{v} = 2\left\{\frac{u-v}{u+v} + \frac{1}{3}\left(\frac{u-v}{u+v}\right)^3 + \frac{1}{5}\left(\frac{u-v}{u+v}\right)^5 + \dots\right\}$$

$$\log\frac{u}{v} = M\,l\,\frac{u}{v} \quad \text{wenn } M \text{ für das Brigg'sche System}$$