BIJLAGE 2

$$\frac{du}{dx} = \frac{\sin(2x).\sin^2 x}{A.\cos^{3/2}(2x)}$$

AFGELEIDE TELLER:

$$\frac{dT}{dx} = \sin(2x).2\sin x.\cos x + \sin^2 x.2\cos(2x)$$

$$= \sin^2(2x) + 2\sin^2 x.\cos(2x)$$

$$= \sin^2(2x) + 2\sin^2 x.(\cos^2 x - \sin^2 x) = \sin^2(2x) + \tfrac{1}{2}\sin^2(2x) - 2\sin^4(x)$$

$$= \tfrac{3}{2}\sin^2(2x) - 2\sin^4(x)$$

AFGELEIDE NOEMER:

$$\frac{dN}{dx} = \frac{3}{2}A.\cos^{1/2}(2x).-\sin(2x).2 = -3A.\sin(2x).\cos^{1/2}(2x)$$

$$\frac{d^2u}{dx^2} = \frac{A\cos^{3/2}(2x\left[\tfrac{3}{2}\sin^2(2x) - 2\sin^4(x)\right] + \sin(2x).\sin^2 x\left[3A\cos^{1/2}(2x).\sin(2x)\right]}{A^2\cos^3(2x)}$$

$$= \frac{\tfrac{3}{2}\sin^2(2x) - 2\sin^4(x)}{A.\cos^{3/2}(2x)} + \frac{3\sin^2(2x).\sin^2(x)}{A.\cos^{5/2}(2x)}$$

ER GELDT OOK: $u = \dfrac{\cos^2(x)}{A.\cos^{1/2}(2x)} \Rightarrow \dfrac{1}{\cos^{1/2}(2x)} = \dfrac{u.A}{\cos^2(x)}$

$$= \left[\frac{\tfrac{3}{2}\sin^2(2x) - 2\sin^4 x}{\cos^6(x)}\right].u^3.A^2 + \left[\frac{3\sin^2(2x).\sin^2(x)}{\cos^{10}(x)}\right].u^5.A^4$$

MET: $\sin^2(2x) = 4\sin^2 x.\cos^2 x = 4(1-\cos^2 x).\cos^2 x = 4\cos^2 x - 4\cos^4 x$

$$\Rightarrow = \left[\frac{6(\cos^2 x - \cos^4 x) - 2(1-\cos^2 x)^2}{\cos^6(x)}\right].u^3A^2 + \left[\frac{12(\cos^2 x - \cos^4 x)(1-\cos^2 x)}{\cos^{10}(x)}\right].u^5.A^4$$

$$\Rightarrow = \frac{(-8\cos^4(x) + 10\cos^2(x) - 2)}{\cos^6(x)}.u^3.A^2 + \frac{(12\cos^6(x) - 24\cos^4(x) + 12\cos^2(x))}{\cos^{10}(x)}.u^5.A^4$$

$$\Rightarrow = \left[\frac{-2}{\cos^6 x} + \frac{10}{\cos^4 x} - \frac{8}{\cos^2 x}\right].u^3.A^2 + \left[\frac{12}{\cos^8 x} - \frac{24}{\cos^6 x} + \frac{12}{\cos^4 x}\right].u^5.A^4$$