Podobne zo spojitosti $u(x)$ a $du(x)/dx$ v bode $x=a$

$$F e^{-\alpha a} = C\sin\beta a + D\cos\beta a \qquad (3)$$

$$-\alpha F e^{-\alpha a} = C\cos\beta a - D\sin\beta a \qquad (4)$$

(3)−(1) $$(F-B)\,e^{-\alpha a} = 2C\sin\beta a \qquad (5)$$

(4)+(2) $$\alpha(F-B)\,e^{-\alpha a} = 2\beta C\cos\beta a \qquad (6)$$

(3)+(1) $$(B+F)\,e^{-\alpha a} = 2D\cos\beta a \qquad (7)$$

(2)−(4) $$\alpha(B+F)\,e^{-\alpha a} = 2D\beta\sin\beta a \qquad (8)$$

Máme dva typy riešení!

1 Ak $C=0$ a $F=B \Rightarrow$ (5) a (6) platia identicky a z (7) a (8) dostaneme

$$\frac{2\beta D\sin\beta a}{2D\cos\beta a} = \frac{\alpha(B+F)\,e^{-\alpha a}}{(B+F)\,e^{-\alpha a}}$$

$$\boxed{\beta\,\mathrm{tg}\,\beta a = \alpha} \qquad (9)$$

2 Ak $D=0$ a $B=-F \Rightarrow$ (7) a (8) platia identicky a z (5) a (6) máme

$$\frac{-\alpha(F-B)\,e^{-\alpha a}}{(F-B)\,e^{-\alpha a}} = \frac{2\beta C\cos\beta a}{2C\sin\beta a}$$

$$\boxed{-\alpha = \beta\,\mathrm{cotg}\,\beta a} \qquad (10)$$

Riešme (9) geometricky (transcendentná)

Položme: $\xi = \beta a \qquad \eta = \alpha a$

$$\Rightarrow \xi^2 + \eta^2 = a^2(\beta^2+\alpha^2) = a^2\frac{2m}{\hbar^2}\left[E+V_0-E\right] = \frac{2m}{\hbar^2}V_0 a^2 = R^2$$