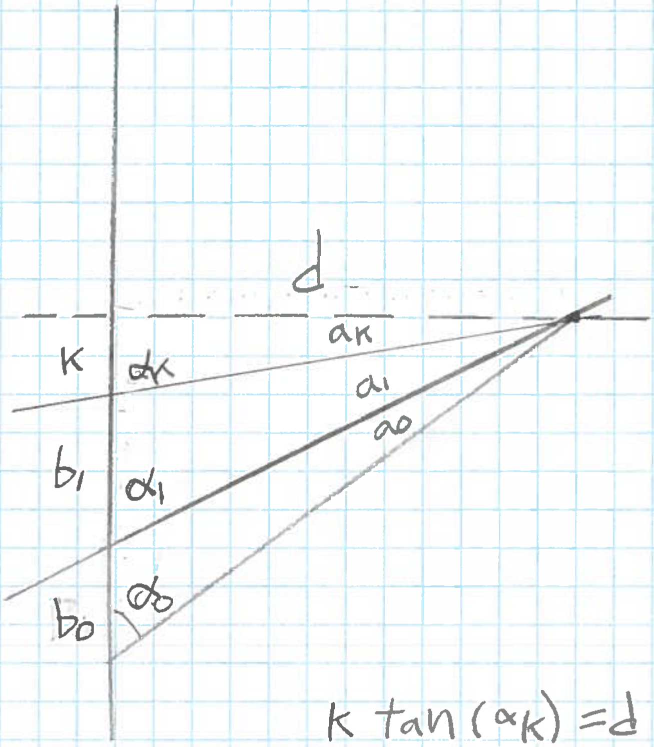

Knowns
a_0, a_1, b_0, b_1

Unknowns
$a_K, \alpha_K, \alpha_0, \alpha_1, K, d$

$$K \tan(\alpha_K) = d$$
$$(K + b_1) \tan(\alpha_1) = d$$
$$(K + b_1 + b_0) \tan(\alpha_0) = d$$

$$\alpha_K + a_K = \pi/2$$
$$\alpha_1 + a_1 + a_K = \pi/2$$
$$\alpha_0 + a_0 + a_1 + a_K = \pi/2$$

$$\alpha_K = \pi/2 - a_K$$
$$\alpha_1 = \pi/2 - a_1 - a_K$$
$$\alpha_0 = \pi/2 - a_0 - a_1 - a_K$$
let $A = \pi/2 - a_K$

$$d = k\tan(A) = (k+b_1)\tan(A-a_1) = (k+b_0+b_1)\tan(A-a_0-a_1)$$

$$d = k\tan(A) = (k+b_1)\frac{\tan(A)-\tan(a_1)}{1+\tan(A)\tan(a_1)} =$$

$$= (k+b_0+b_1)\frac{\tan(A)-\tan(a_0+a_1)}{1+\tan(A)\tan(a_0+a_1)}$$

$$k\tan(A)\left(1+\tan(A)\tan(a_1)\right) = (k+b_1)\left(\tan(A)-\tan(a_1)\right)$$

$$\cancel{k\tan(A)} + k\tan^2(A)\tan(a_1) = \cancel{k\tan(A)} - k\tan(a_1) + b_1\tan(A) - b_1\tan(a_1)$$

$$k\tan^2(A)\tan(a_1) + k\tan(a_1) = b_1\left(\tan(A) - \tan(a_1)\right)$$

$$k\tan(a_1)\left[\tan^2(A)+1\right] = b_1\left(\tan(A) - \tan(a_1)\right)$$

$$k\left[\sec^2(A)\right] = \frac{b_1\left(\tan(A) - \tan(a_1)\right)}{\tan(a_1)}$$

$$k = \frac{b_1\left(\frac{\tan(A)}{\tan(a_1)} - 1\right)}{\sec^2(A)}$$

by similarity of algebra

$$(b_0+b_1)\left(\frac{\tan(A)}{\tan(a_0+a_1)} - 1\right)\cancel{\cos^2 A} = b_1\left(\frac{\tan(A)}{\tan(a_1)} - 1\right)\cancel{\cos^2(A)}$$

$$0 = b_1\frac{\tan(A)}{\tan(a_1)} - b_1 - b_0\frac{\tan(A)}{\tan(a_0+a_1)} - b_1\frac{\tan(A)}{\tan(a_0+a_1)} + b_0 + b_1$$

$$0 = \frac{b_1 \tan(A)}{\tan(a_1)} - \frac{(b_0+b_1)\tan(A)}{\tan(a_0+a_1)} + b_0$$

$$-b_0 = \tan(A)\left(\frac{b_1}{\tan(a_1)} - \frac{b_0+b_1}{\tan(a_0+a_1)}\right)$$

$$\frac{-b_0}{\left(\frac{b_1}{\tan(a_1)} - \frac{b_0+b_1}{\tan(a_0+a_1)}\right)} = \tan(A)$$

$$\tan^{-1}\left(\frac{-b_0}{\frac{b_1}{\tan(a_1)} - \frac{b_0+b_1}{\tan(a_0+a_1)}}\right) = A = \pi/2 - a_K$$

$$K \tan(\alpha_K) = d = (K + 6_1) \tan(\alpha_1)$$

$$K \tan(\alpha_K) - K \tan(\alpha_1) = 6_1 \tan(\alpha_1)$$

$$K = \frac{6_1 \tan(\alpha_1)}{\tan(\alpha_K) - \tan(\alpha_1)}$$