NEW FORMULA 3.511.2

The original formula is

$$\int_0^\infty \frac{\sinh ax}{\sinh bx}\, dx = \frac{\pi}{2b} \tan\left(\frac{\pi a}{2b}\right)$$

The change of variables $t = bx$ gives (after replacing a/b by a and going back to x as the integration variable) the new formula

$$\int_0^\infty \frac{\sinh ax}{\sinh x}\, dx = \frac{\pi}{2} \tan\left(\frac{\pi a}{2}\right)$$