NEW FORMULA 3.826.1

The original formula is

$$\int_0^\infty \frac{\sin^2(ax)\,dx}{x^2(b^2+x^2)} = \frac{\pi}{4b^2}\left[2a - \frac{1-e^{-2ab}}{b}\right]$$

The change of variables $x = bt$ and replacing ab by a (and going back to x as the integration variable) gives the new formula

$$\int_0^\infty \frac{\sin^2(ax)\,dx}{x^2(1+x^2)} = \frac{\pi}{4}\left[2a - (1-e^{-2a})\right]$$