14. (a) Let $A = \int_0^b \frac{f(x)}{f(x) + f(b - x)}\,dx.$

Let $u = b - x$, $du = -dx$.

$$A = \int_b^0 \frac{f(b - u)}{f(b - u) + f(u)}(-du) = \int_0^b \frac{f(b - u)}{f(b - u) + f(u)}\,du = \int_0^b \frac{f(b - x)}{f(b - x) + f(x)}\,dx$$

Then, $2A = \int_0^b \frac{f(x)}{f(x) + f(b - x)}\,dx + \int_0^b \frac{f(b - x)}{f(b - x) + f(x)}\,dx = \int_0^b 1\,dx = b.$

So, $A = \frac{b}{2}$.

(b) $b = 1 \Rightarrow \int_0^1 \frac{\sin x}{\sin(1 - x) + \sin x}\,dx = \frac{1}{2}$

(c) $b = 3$, $f(x) = \sqrt{x}$

$$\int_0^3 \frac{\sqrt{x}}{\sqrt{x} + \sqrt{3 - x}}\,dx = \frac{3}{2}$$