(15) $f\left(\frac{3x-4}{3x+4}\right) = x+2, \quad x \neq -4/3$

then. $\int f(x)\,dx = A\log|1-x| + Bx + C$

find A and B

$\Rightarrow$

let $\frac{t}{1} = \frac{3x-4}{3x+4}$

Applying componendo & dividendo

$\Rightarrow \frac{1+t}{1-t} = \frac{6x}{8}$

$\Rightarrow x = \frac{4}{3}\left(\frac{1+t}{1-t}\right)$

Now

$f(t) = \frac{4}{3}\left(\frac{1+t}{1-t}\right) + 2$

again $t = x$

$f(x) = \frac{4}{3}\left[\frac{1+x}{1-x}\right] + 2$

Let $1-x = t$

$\Rightarrow x = 1-t$

$$\frac{1+x}{1-x} = \frac{1+1-t}{t} = \frac{2}{t} - 1 = \frac{2}{1-x} - 1$$

$$f(x) = \frac{4}{3}\left(\frac{2}{1-x} - 1\right) + 2$$

$$= \frac{8}{3} \cdot \frac{1}{1-x} + 2 - \frac{4}{3}$$

$$\int f(x)\,dx = \frac{8}{3}\int \frac{1}{1-x}\,dx + \int \frac{2}{3}\,dx$$

$$= \frac{8}{3}\ln|1-x| + \frac{2}{3}x + C$$

$$A = \frac{8}{3}, \quad B = \frac{2}{3}$$