12.30 a

$$\int \frac{2}{(x^2+1)(x-1)}\, dx = \int \frac{Ax+B}{x^2+1} + \frac{C}{x-1}\, dx$$

$$2 = (Ax+B)(x-1) + C(x^2+1) = Ax^2 - Ax + Bx - B + Cx^2 + C =$$

$$= (A+C)x^2 + (-A+B)x + C - B$$

$A + C = 0$

$B - A = 0$

$C - B = 2$

$B + C = 0$

$2C = 2$

$-B = 1$

$\boxed{A = -1}$

$\boxed{C = 1}$

$\boxed{B = -1}$

$$\int \frac{-(x+1)}{x^2+1} + \frac{1}{x-1}\, dx = \ln|x-1| - \int \frac{x}{x^2+1}\, dx - \int \frac{1}{x^2+1}\, dx = \ln|x-1| - \frac{1}{2}\ln(x^2+1) - \arctan x + c$$