9. $\dfrac{4}{X+3} + \dfrac{2}{X-3} = \dfrac{15}{X^2-9}$

(DoTS)

$\dfrac{4}{X+3} + \dfrac{2}{X-3} = \dfrac{15}{(X+3)(X-3)}$

$(X+3)(X-3)\left(\dfrac{4}{X+3}\right) + (X+3)(X-3)\left(\dfrac{2}{X-3}\right) = (X+3)(X-3)\left(\dfrac{15}{(X+3)(X-3)}\right)$

$4(X-3) + 2(X+3) = 15$

$4X - 12 + 2X + 6 = 15$

$6X - 6 = 15$

$6X = 15 + 6$

$6X = 21$

$\dfrac{6X}{6} = \dfrac{21}{6}$

$\boxed{X = \dfrac{7}{2}}$

10. $\dfrac{8}{X+4} - \dfrac{2}{X-3} = \dfrac{-5}{X^2+X-12}$

(PSD)

$\dfrac{8}{X+4} - \dfrac{2}{X-3} = \dfrac{-5}{(X+4)(X-3)}$

$(X+4)(X-3)\left(\dfrac{8}{X+4}\right) - \dfrac{2}{X-3}(X+4)(X-3) = (X+4)(X-3)\left(\dfrac{-5}{(X+4)(X-3)}\right)$

$8(X-3) - 2(X+4) = -5$

$8X - 24 - 2X - 8 = -5$

$6X - 32 = -5$

$6X = -5 + 32$

$6X = 27$

$\dfrac{6X}{6} = \dfrac{27}{6}$

$\boxed{X = \dfrac{9}{2}}$