

## PROBLEMAS DE EXPRESIONES ALGEBRAICAS Y OPERACIONES

### Problema 113:

Calcular el valor de x, en:

$$(a + b) \left[ \frac{a + bx}{a + b} - \frac{a - bx}{a - b} \right] = \frac{abx}{a - b}$$

### Solución Problema 113:

$$(a + b) \left[ \frac{a + bx}{a + b} - \frac{a - bx}{a - b} \right] = \frac{abx}{a - b}$$

$$(a + b) \left[ \frac{(a + bx)(a - b) - (a - bx)(a + b)}{(a + b)(a - b)} \right] = \frac{abx}{a - b}$$

$$\cancel{(a + b)} \left[ \frac{(a + bx)(a - b) - (a - bx)(a + b)}{\cancel{(a + b)}\cancel{(a - b)}} \right] = \frac{abx}{\cancel{a - b}}$$

$$(a + bx)(a - b) - (a - bx)(a + b) = abx$$

$$a^2 + abx - ab - b^2x - (a^2 - abx + ab - b^2x) = abx$$

$$\cancel{a^2} + abx - ab - \cancel{b^2x} - \cancel{a^2} + abx - ab + \cancel{b^2x} = abx$$

$$abx - ab + abx - ab = abx$$

$$2abx - 2ab - abx = 0$$

$$abx - 2ab = 0$$

$$abx = 2ab$$

$$x = \frac{2ab}{ab} = 2$$