

# Shouji Rating System V3

## Formulas

$$A\mu = 1500$$

$$B\mu = 1500$$

$$A\phi = 32$$

$$B\phi = 32$$

$$\beta = 400$$

$$Af = A\phi \cdot AT$$

$$Bf = B\phi \cdot BT$$

$$AT = 1 - A\phi / (A\phi + A\mu)$$

$$BT = 1 - B\phi / (B\phi + B\mu)$$

$$A^{\circ} = 1 / (1 + 10^{((B\mu - A\mu) / \beta)})$$

$$B^{\circ} = 1 / (1 + 10^{((A\mu - B\mu) / \beta)})$$

$$A\emptyset, 1 = \text{Win}, 0.5 = \text{Draw}, 0 = \text{Loss.}$$

$$B\emptyset, 1 = \text{Win}, 0.5 = \text{Draw}, 0 = \text{Loss.}$$

$$A\mu' = A\mu + Af \cdot (A\emptyset - A^{\circ})$$

$$B\mu' = B\mu + Bf \cdot (B\emptyset - B^{\circ})$$

$$A\phi' = Af$$

$$B\phi' = Bf$$