

Shouji Rating System

Formulas

$$A\mu = 1500$$

$$B\mu = 1500$$

$$A\sigma = 225$$

$$B\sigma = 225$$

$$A\varsigma = 0$$

$$B\varsigma = 0$$

$$\beta = 400$$

$$\alpha = 0.5$$

$$\varphi = 0.5$$

$$\rho = \beta((At + Bt)/2)$$

$$Af = A\sigma ** At$$

$$Bf = B\sigma ** Bt$$

$$At = (A\sigma / (A\sigma + \beta)) ** (1 - \alpha)$$

$$Bt = (B\sigma / (B\sigma + \beta)) ** (1 - \alpha)$$

$$Ap = \arctan((A\mu - B\mu)/\rho)/\pi + 0.5$$

$$Bp = \arctan((B\mu - A\mu)/\rho)/\pi + 0.5$$

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

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

$$A\mu' = A\mu + Af(As - Ap) + AfA\varsigma$$

$$B\mu' = B\mu + Bf(Bs - Bp) + BfB\varsigma$$

$$A\sigma' = \varphi A\sigma + \beta|A\varsigma|$$

$$B\sigma' = \varphi B\sigma + \beta|B\varsigma|$$