

Certified Rigger – ARENA Formula Table

$$A_1:A_2 = B_1:B_2 = C_1:C_2$$

$$C = \sqrt{AA + BB}$$

$$F_1 = (N_{2X}N_{3Y} - N_{3X}N_{2Y}) \left(\frac{F}{D} \right)$$

$$F_1 = \frac{D_2 W}{S}$$

$$F_2 = \frac{-D_1 W}{S}$$

$$F_2 = \frac{-F_A D_1}{S}$$

$$F_2 = (N_{3X}N_{1Y} - N_{1X}N_{3Y}) \left(\frac{F}{D} \right)$$

$$F_H = \frac{HW}{V}$$

$$F_r = \frac{P \sin < a}{\sin \left(\frac{< a}{2} \right)}$$

$$F_{V2} = \frac{WV_2 H_1}{V_1 H_2 + V_2 H_1}$$

$$L_1 = \sqrt{(V_1 - V_3)^2 + (H_1 - H_3)^2 + (D_1 - D_3)^2}$$

$$L_2 = \sqrt{(V_2 - V_3)^2 + (H_2 - H_3)^2 + (D_2 - D_3)^2}$$

$$P_1 = \frac{D_1 W_1}{S} + \frac{D_2 W_2}{S} + \frac{D_3 W_3}{S}$$

$$P_2 = \sqrt{(X_2 - X_4)^2 + (Y_2 - Y_4)^2 + (Z_2 - Z_4)^2}$$

$$P_3 = \sqrt{(X_3 - X_4)^2 + (Y_3 - Y_4)^2 + (Z_3 - Z_4)^2}$$

$$T_1 = \frac{WL_1 H_2}{V_1 H_2 + V_2 H_1}$$

$$T_2 = F \left(\frac{L_2}{L_3} \right) \left(\frac{V_3 H_1 - V_1 H_3}{V_1 H_2 + V_2 H_1} \right)$$

$$T_{L1} = \frac{WD_2 L_1}{SH}$$

$$T_{L2} = \frac{WD_2 L_2}{SH}$$

$$C = \sqrt{A^2 + B^2}$$

$$F_1 = \frac{D_1 W_1 + D_2 W_2 - D_3 W_3}{S}$$

$$F_1 = \frac{F_A D_2}{S}$$

$$F_2 = \frac{D_1 W}{S}$$

$$F_2 = \frac{F_A D_1}{S}$$

$$F_2 = \frac{D_5 W_2 + D_6 W_3 - D_4 W_1}{S}$$

$$F_3 = (N_{1X}N_{2Y} - N_{2X}N_{1Y}) \left(\frac{F}{D} \right)$$

$$F_{H1} = \frac{WH_1 H_2}{V_1 H_2 + V_2 H_1}$$

$$F_{V1} = \frac{WV_1 H_2}{V_1 H_2 + V_2 H_1}$$

$$L = \sqrt{V^2 + H^2}$$

$$L_1 = \sqrt{(V_1 - V_3)^2 + (H_1 - H_3)^2}$$

$$L_2 = \sqrt{(V_2 - V_3)^2 + (H_2 - H_3)^2}$$

$$P_1 = \sqrt{(X_1 - X_4)^2 + (Y_1 - Y_4)^2 + (Z_1 - Z_4)^2}$$

$$P_2 = \frac{D_5 W_2}{S} + \frac{D_6 W_3}{S} + \frac{D_4 W_1}{S}$$

$$R_2 = \frac{W_1 \left(\frac{L_1 + L_2}{2} \right) + W_2 (L_1 + L_2)}{L_1}$$

$$T_1 = F \left(\frac{L_1}{L_3} \right) \left(\frac{V_3 H_2 - V_2 H_3}{V_1 H_2 + V_2 H_1} \right)$$

$$T_2 = \frac{WL_2 H_1}{V_1 H_2 + V_2 H_1}$$

$$T_{L1} = \frac{WD_2 L_1}{H_1 D_2 + H_2 D_1}$$

$$T_{L2} = \frac{WD_1 L_2}{H_1 D_2 + H_2 D_1}$$

Note: This list of formulas is provided by ETCP to aid candidates in completing the examination. However, it should not be considered a complete and exhaustive list of formulas that could be used in performing calculations on the exam.