Problem 1:
Design the formwork for a flat slab floor of 5" thick of normal weight concrete (unit weight, 150 pcf). All the timbers are No. 2 Douglas Fir-South (dry use condition). The formwork will be used one time for short duration (7 days or less). The maximum deflection for bending members is taken as 1/360 of the span. Based on end conditions, the effective unbraced length of shores may be taken as 10 ft. Assume all bending members to be supported on three or more spans. Assume that the slab will be 100 ft x 150 ft and placed in one operation. Consider minimum construction live load of 50 psf and form self-weight of 5 to 15 psf. (Use necessary tables).

Design Steps:
(a) Calculate loads (Dead Load + Live load) on Plywood sheathing.

\[ w = \underline{\hspace{1cm}} \text{psf} \]
(b) Select Plywood Thickness _____ inch and class ______, find **Joist Spacing**.
(c) Select Joist size _____X_____, find **Stringer Spacing**.
(d) Select springer size _____X_____, find **Shore Spacing**.
(e) Calculate **shore load**, \( P_{\text{shore}} \)

(f) Select shore size \( \text{______X______} \), calculate shore capacity, \( P_{\text{shore capacity}} \) and compare with the shore load (step (e)). If the shore capacity \( \geq \) shore load, the selected shore size is adequate.
(g) Design for lateral bracing.