The Vertex Packing Integer Program (VPIP) here is:

\[
\text{maximize: } z = x_1 + x_2 + x_3 \\
\text{subject to: } \\
x_0 + x_1 \leq 1 \\
x_0 + x_2 \leq 1 \\
x_1 + x_2 \leq 1 \\
x_0 + x_1 + x_3 \leq 1 \\
x_0, x_1, x_2, x_3 \in \{0, 1\}.
\]

The Vertex Packing Linear Program (VPLP) is the same, except with the relaxed condition of the decision variables: \(0 \leq x_i \leq 1\).

1. The VPLP is the primal. Now write the dual.

2. Find an optimum (guess and test).