

An amateur furniture-maker can make two items: a chair and a table. Each chair requires  $10ft^2$  of wood and 2 hours of labour; each table requires  $21ft^2$  of wood and 1 hour of labour. He can sell what he makes at \$80 per chair and \$150 per table. One weekend he has 22 hours to devote to furniture-making, and  $156ft^2$  of wood available. Suppose his goal is to maximise the income from his endeavour.

1. Formulate his problem as an integer programming problem.
2. Solve the resulting problem using the branch-and-bound algorithm.