A firm produces two goods 1 and 2 and has the following cost function



Where *Q*1 and *Q*2 denote quantities of good 1 and 2. *P*1 and *P*2 denote the corresponding prices and the demand functions are:





Determine the maximum profit if the firm in total produces 15 units, that is if *Q*1 + *Q*2 = 15.