**The supply and demand equations for a hypothetical perfectly competitive market are given by   *QS = -*100 *+* 3*P* and *QD =* 500 *-* 2*P***.

a. D**etermine the  firm’s optimal (i.e. profit maximizing level of output) and its profit or loss.**b. Graph the MR and MC curves and use the graph to find the output at which the two curves intersect. (\*\*The graph must be used to provide the answer to the question.

 **Total Fixed   Total Variable**

                                      **Output        cost                 cost**

                                              0         $100           $   0

                                              1           100            100

                                              2           100            180

                                              3           100             240

                                              4           100             320

                                              5           100            440

                                              6           100             600

                                              7           100             800

                                              8           100           1040

                                              9           100           1340

                                             10          100           1800