Do this problem after you have completed Sheet 3.

A fortunate student receives a bequest of $21,000. She decides to invest the money for one year and receives the following advice from a reliable advisor.

Company Growitt will give 6.0% on an investment of up to $15,000. Company Grabbitt will only give 4.0% without a maximum limit.

The advisor suggests that she would be wise to not invest more than twice the amount with Growitt as she invests with Grabbit.

Assuming that the student acts on this advice and invests the $21,000 with both companies, find how much she should invest with each one to receive maximum interest for the year:

(a) by drawing a graph (and finding the feasible region) and

(b) by using the Simplex method.

Answers

(a) The feasible region has corner points at (6000, 0), (6000, 12000), (7000, 14000) and (21000, 0). Maximum is $1120

(b) Max = $1120 with Grabbitt’s investment = $7,000 and Growitt’s = $14,000