

Modeling Linear Problems

1.

A calculator company produces a scientific calculator and a graphing calculator. Long-term projections indicate an expected demand of at least 100 scientific and 80 graphing calculators each day. Because of limitations on production capacity, no more than 200 scientific and 170 graphing calculators can be made daily. To satisfy a shipping contract, a total of at least 200 calculators must be shipped each day.

If each scientific calculator sold results in a \$2 loss, but each graphing calculator produces a \$5 profit, how many of each type should be made daily to maximize net profits?

2.

A garden shop wishes to prepare a supply of special fertilizer at a minimal cost by mixing two fertilizers, A and B. The mixture is to contain:

- at least 45 units of phosphate
- at least 36 units of nitrate
- at least 40 units of ammonium

Fertilizer A costs the shop \$.97 per pound.

Fertilizer B costs the shop \$1.89 per pound.

Fertilizer A contains 5 units of phosphate and 2 units of nitrate and 2 units of ammonium.

Fertilizer B contains 3 units of phosphate and 3 units of nitrate and 5 units of ammonium.

How many pounds of each fertilizer should the shop use in order to minimize their cost?