A store has requested a manufacturer produce pants and a sports jacket.

For materials, the manufacturer has 750 m^2 of cotton and 1000 m^2 of polyester. Every pair of pants needs 1 m^2 of cotton and 2 m^2 of polyester. Every jacket needs 1.5 m^2 of cotton and 1 m^2 of polyester.

If pants are to be sold for \$50 each and jackets for \$40 each, write and graph a system of inequalities to maximize the stores income.

p = # pants

j = # jackets

$1p + 1.5j \leq 750$

$2p + 1j \leq 1000$

$j \geq 0$ $p \geq 0$

$j \geq 0$ $p \geq 0$

$1.5j + p \leq 750$ (j-int 500, p-int 750)

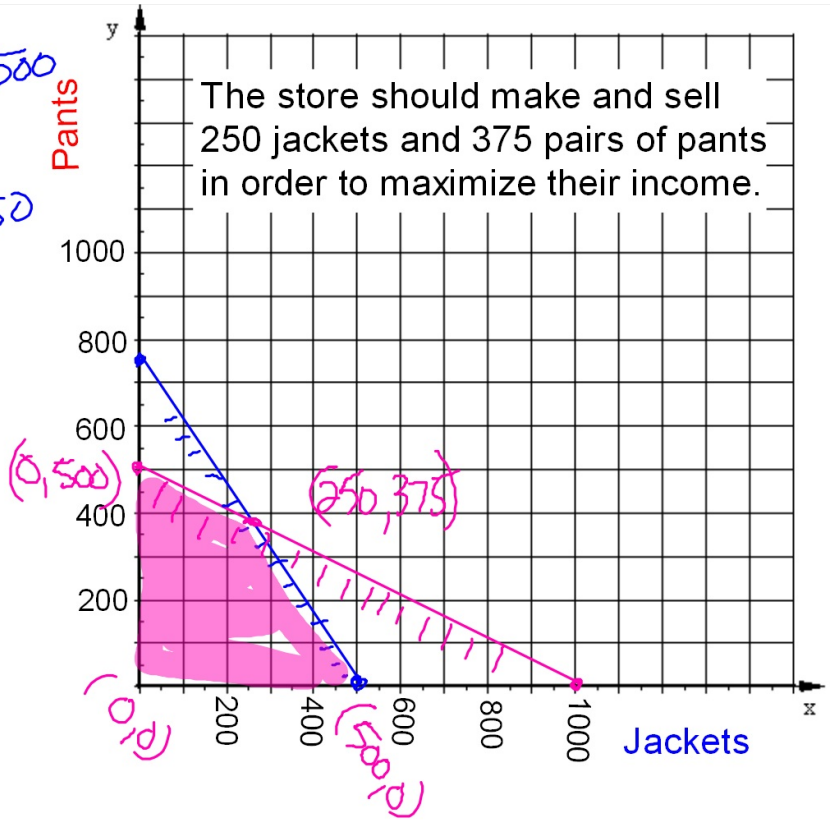
$j + 2p \leq 1000$

j-int = 1000

p-int = 500

Income EQ: $40j + 50p = I$

j	p	Income
0	500	25,000
250	375	27,500
500	0	20,000
0	0	0



The store should make and sell 250 jackets and 375 pairs of pants in order to maximize their income.