Systems of Linear Inequalities

The student council hires a theater group for $1500. There are 400 seats in the auditorium. Tickets to the performance cost $5 for children and $10 for adults. How many tickets must they sell in order to at least "break even."

Define variables

Let c = # children's tickets

a = # adult tickets

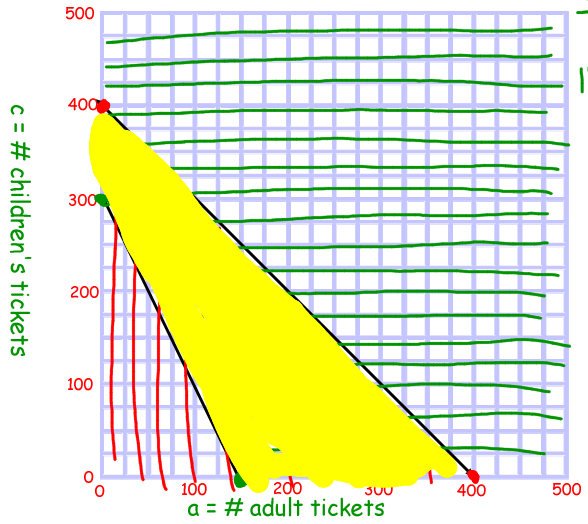
Write inequalities

$a + c \leq 400$

$10a + 5c \geq 1500$

Graph each inequality

a	c
0	300
150	0



Graph this system of inequalities

$y < \frac{1}{1}x + 4$

$b = 4$

$m = \frac{1}{1} = \frac{\text{up } 1}{\text{rt. } 1}$

Test (0,0)

$0 < 0 + 4$

$0 < 4$

Yes

$y \geq -2x + 2$

$b = 2$

$m = \frac{-2}{1} = \frac{\text{down } 2}{\text{rt. } 1}$

Test (0,0)

$0 \geq -2(0) + 2$

$0 \geq 2$

No