

Notes on Systems of Linear Inequality Word Problems Notes

Match the following words to the correct inequality sign.

| | | | | | | |
|-------------------------|----------------------------------|-------------------------------------|----------------------------|---------------------------|-------------------------|------------------|
| greater than | At least | No less than | No fewer | Is larger than | below | above |
| fewer | Less than | Greater than or equal to | more than | At the maximum | Smaller than | |
| No more than | Less than or equal to | At Most | No greater than | At the minimum | Bigger than | |

greater than
 $>$

less than
 $<$

greater than or equal to
 \geq

less than or equal to
 \leq

- greater than
- Is larger than
- Above
- more than
- Bigger than

- Below
- fewer
- less than
- Smaller than
- ~~no more than~~

- At least
- No less than
- No fewer
- greater than or equal to
- At the minimum

- At the maximum
- No more than
- less than or equal to
- At most
- No greater than

Use the information above to help you write a system of inequalities for the following situations.

1. You can work a total of no more than 41 hours each week at your two jobs. Housecleaning pays \$5 per hour and your sales job pays \$8 per hour. You need to earn at least \$254 each week to pay your bills. Write a system of inequalities that shows the various numbers of hours you can work at each job.

$h = \text{house cleaning}$ $s = \text{sales}$

$$5h + 8s \geq 254$$

$$h + s \leq 41$$

2. Members of a school booster club want to sell at least 10 school jackets and at least 21 caps during a fundraiser to cover their regular club expenses. The club will make \$14 for every jacket sold and \$2 for every cap sold. The club also wants the total amount of money earned to be at least \$300. Write a system of inequalities that shows how many jackets and caps the club members need to sell to meet the conditions above.

① $14j + 2c \geq 300$

② $j \geq 10$

③ $c \geq 21$

$j = \text{jackets}$ $c = \text{caps}$