

Word Problems

- Most of these problems will not give you a slope and y-intercept.
- You will not be writing inequalities in Slope-Intercept Form.
- You will be writing equations in Standard Form.

↳ and will need to get them into slope-intercept form afterwards.

Standard Form Word Problems

- Figure out what x and y represent.
- Write an inequality for each topic in the problem.

(2 systems)

Word Problem #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.

$x = \text{Housecleaning}$

$y = \text{Sales}$

Hours: $x + y \leq 41$

Money: $5x + 8y \geq 254$

$$\text{Money: } 5x + 8y \geq 254$$

$$\text{Hours: } x + y \leq 41$$

Word Problem #4

Mary babysits for \$4 per hour. She also works as a tutor for \$7 per hour. She is only allowed to work 13 hours per week. She wants to make at least \$65. Write and graph a system of inequalities to represent this situation.

$x = \text{babysitting}$

$y = \text{Tutor}$

Hours: $x + y \leq 13$

Money: $4x + 7y \geq 65$

$$\text{Money: } 4x + 7y \geq 65$$

$$\text{Hours: } x + y \leq 13$$

Practice 1

You are taking a math quiz and need to complete at least 10 geometry problems and algebra problems within 2 hours. It will take you 30 minutes to complete a geometry problem and 10 minutes to complete an algebra problem. Which of the following linear inequalities correctly models this situation?

X = Geometry
Y = Algebra

Time: $30x + 10y \leq 120$
of problems: $x + y \geq 10$

Practice 2

You can work a maximum of 40 hours a week. You need to make \$400 in order to cover your expenses. Your office job pays \$12 an hour and your babysitting job pays \$10 an hour. Which of the following linear inequalities correctly models this situation?

X: office
Y: babysitting

Hours: $x + y \leq 40$
Money: $12x + 10y \geq 400$

Practice 3

Your spare time must not exceed a maximum of 20 hours a week and your weekly allowance is \$70. You need to pay \$5 an hour for playing video games and \$2 an hour for bowling. ~~Which of the following linear inequalities correctly models this situation?~~

X: Video games

Y: Bowling

Money: $5x + 2y \leq 70$

Hours: $x + y \leq 20$