DO NOW

Jordan works for a landscape company during his summer vacation. He is paid \$12 per hour for mowing lawns and \$14 per hour for planting gardens. He can work a maximum of 40 hours per week, and would like to earn at least \$250 this week. If m represents the number of hours mowing lawns and g represents the number of hours planting gardens, which system of inequalities could be used to represent the given conditions?

1) $m+g \le 40$
$12m+14g \ge 250$

2) $m+g \ge 40$
$12m+14g \le 250$

3) $m+g \le 40$
$12m+14g \le 250$

4) $m+g \ge 40$
$12m+14g \ge 250$

$m+g \le 40$

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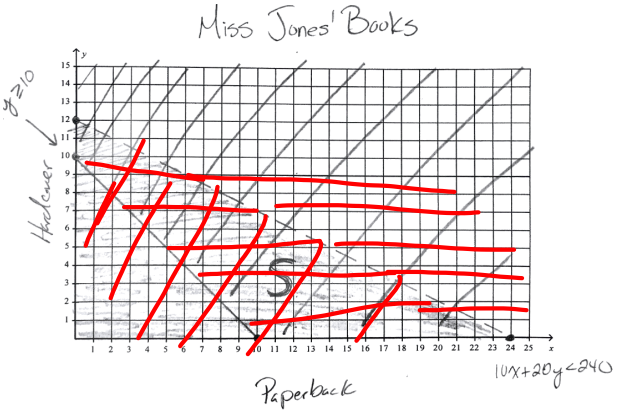
HW Answers

3) a) Let x = # paperbacks

y = # hardcovers

$x+y \ge 10$

b) $10x+20y < 240$

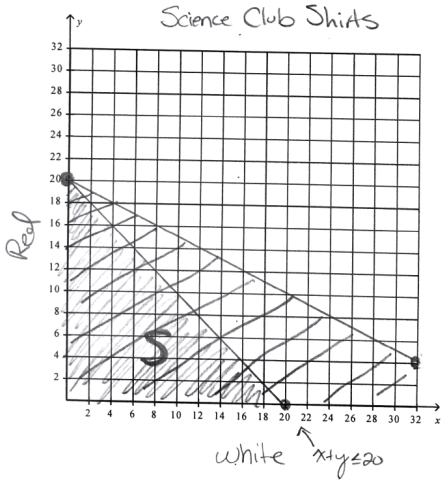


4) a) Let x = # white

y = # red

$x+y \le 20$

b) $3x+6y \le 120$



Nov 18-8:01 AM

Word Problem Key Words!

Equations	Inequalities
Is	At least
Equals	No More Than
	No Less Than
	Greater Than
	At Most

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1. The cost of three notebooks and four pencils is $8.50. The cost of five notebooks and eight pencils is $14.50. Determine the cost of one notebook and the cost of one pencil.

Let x = Cost notebooks
y = cost pencils

$3x + 4y = 8.50$
$5x + 8y = 14.50$

notebooks = $2.50
Pencils = 25¢ or $.25

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2. You can work at most 20 hours next week. You need to earn at least $92 to cover you weekly expenses. Your dog- walking job pays $7.50 per hour and your job as a car wash attendant pays $6 per hour. Write a system of linear inequalities to model the situation.

Let x = dog walking
y = car wash

$x + y \leq 20$

$7.5x + 6y \geq 92$

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3. Jonah is going to the store to buy candles. Small candles cost $3.50 and large candles cost $5.00. He needs to buy at least 20 candles, and he cannot spend more than $80. Write a system of linear inequalities that represent the situation.

Let x = small
y = large

$x + y \geq 20$

$3.50x + 5y \leq 80$

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4. A drama club is selling tickets to the spring musical. The auditorium holds 200 people. Tickets cost $12 at the door and $8.50 if purchased in advance. The drama club has a goal of selling at least $1000 worth of tickets to Saturday's show. Write a system of inequalities that can be used to model this scenario. If 50 tickets are sold in advance, what is the minimum number of tickets that must be sold at the door so that the club meets its goal? Justify your answer.

Let x = At door
y = Advance

$12x + 8.50y \geq 1000$
$x + y \leq 200$

50 Advance
48 At door

$y = 50$ $12x + 8.50y \geq 1000$
$12x + 8.50(50) \geq 1000$
$12x + 425 \geq 1000$
$\frac{12x}{12} \geq \frac{575}{12}$
$x \geq 47.91\ldots$

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5. The senior classes at High School A and High School B planned separate trips to New York City. The senior class at High School A rented and filled 1 van and 6 buses with 372 students. High School B rented and filled 4 vans and 12 buses with 780 students. Each van and each bus carried the same number of students. How many students can a van carry? How many students can a bus carry?

Van 18
Bus 59

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6. Edith babysits for x hours a week after school at a job that pays $4 an hour. She has accepted a job that pays $8 an hour as a library assistant working y hours a week. She will work both jobs. She is able to work no more than 15 hours a week, due to school commitments. Edith wants to earn at least $80 a week, working a combination of both jobs.

A. Write a system of linear inequalities to model the situation.

B. Does working one hour at school and eleven hours at the library fulfill her requirements?

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