

Ch 6/7  
Review

PC 11 - Two extra examples of  
systems of linear inequality word problems

7. A service station owner, Uma, has two part-time employees: Pali and Meg.
- Pali is skilled at repairs but has limited experience with customers. Uma pays him \$18 an hour.
  - Meg has experience with customers but can do only simple repairs. Uma pays her \$10 an hour.
  - Uma has a budget of \$470 for their wages.
  - Uma can hire both of these employees for no more than 30 h a week, in total. Both employees are scheduled in whole numbers of hours.
- a) Use a graph to choose two possible combinations of hours for Pali and Meg. Explain your choices.

**50. Part-time jobs** Manuel is a college student with two part-time jobs. He earns \$10/h in a music store or \$15/h in a warehouse. He needs to earn at least \$180/week, but he cannot work more than 14 h/week. Write and solve a system of inequalities to determine how many hours he could work at each job in a week.

#7) Let  $x$  = Pali's hours  
Let  $y$  = Meg's hours

- ①  $x \geq 0$  right
- ②  $y \geq 0$  above
- ③  $x + y \leq 30$
- ④  $18x + 10y \leq 470$

③  $y \leq -x + 30$  below

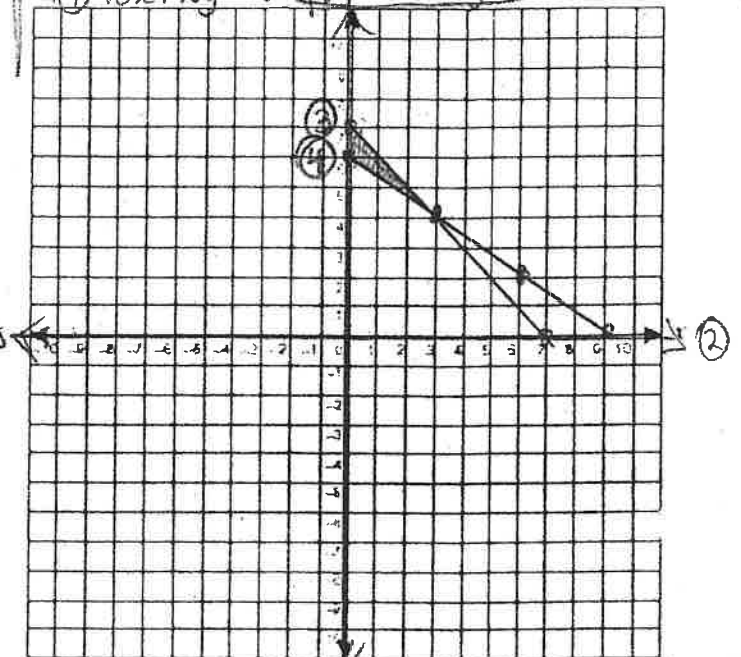
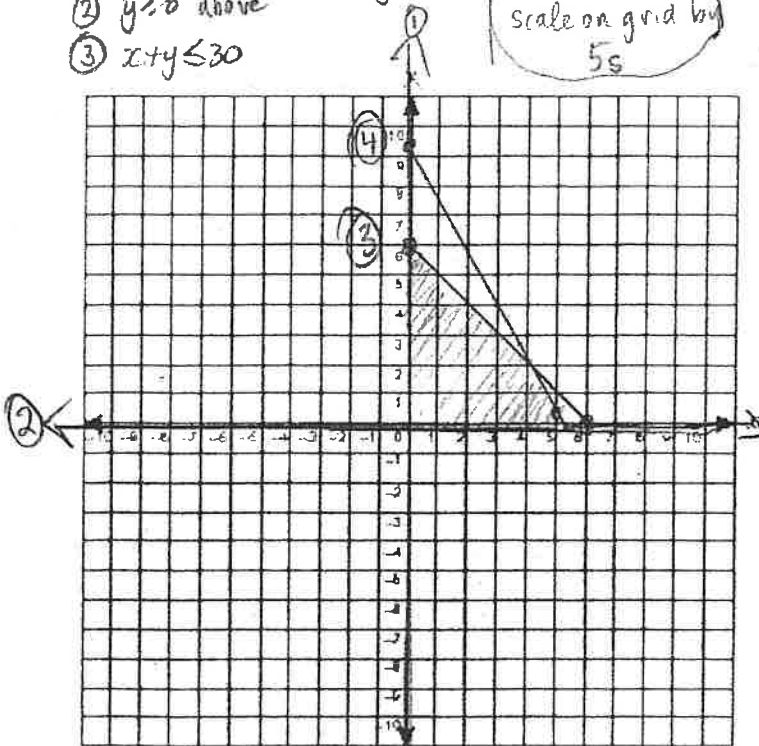
④  $y \leq -\frac{9}{5}x + 47$  below

Scale on grid by 5s

50.) Let  $x$  = hours in music store  
Let  $y$  = hours in warehouse

- ①  $x \geq 0$  RIGHT
- ②  $y \geq 0$  ABOVE
- ③  $x + y \leq 14$
- ④  $10x + 15y \geq 180$
- ③  $y \leq -x + 14$  BELOW
- ④  $y \geq -\frac{2}{3}x + 12$  ABOVE

Do scale by 2s



Two possible combinations (remember, scale by 5s):  
 $(2, 3) \times 5 \Rightarrow (10, 15)$  : 10 hrs Pali, 15 hrs Meg  
 $(4, 1) \times 5 \Rightarrow (20, 5)$  : 20 hrs Pali, 5 hrs Meg

Possible Solutions (remember, scale by 2):  
 $(0, 6) \times 2 \Rightarrow (0, 12)$  : 12 hrs warehouse  
 $(3, 4) \times 2 \Rightarrow (6, 8)$  : 6 hrs music, 8 hrs warehouse

