$\qquad$ Date $\qquad$ Class $\qquad$

LESSON
Practice A

## 6-6 Solving Systems of Linear Inequalities

Tell whether the ordered pair is a solution of the given system.

1. $(4,5) ;\left\{\begin{array}{l}y \leq x+2 \\ y \geq x-1\end{array}\right.$
2. $(1,3) ;\left\{\begin{array}{l}y>3 x \\ y<x+2\end{array}\right.$
3. $(2,3) ;\left\{\begin{array}{l}y<5 x-3 \\ y \geq-x\end{array}\right.$

Graph the system of linear inequalities. a. Give two ordered pairs that are solutions. b. Give two ordered pairs that are not solutions.
4. $\left\{\begin{array}{l}y \geq x+1 \\ y \leq-2 x\end{array}\right.$

5. $\left\{\begin{array}{l}y<2 x+4 \\ y>x-1\end{array}\right.$

a. $\qquad$
b. $\qquad$
a. $\qquad$
b. $\qquad$ b.
a. $\qquad$
$\qquad$
7. Lou is buying macaroni salad and potato salad for a picnic. Macaroni salad costs $\$ 4$ per pound and potato salad costs $\$ 2$ per pound. Lou would like to buy at least 6 pounds of salads and wants to spend no more than $\$ 20$.
a. Write a system of linear equations.

Let $x=$ pounds of macaroni salad
Let $y=$ pounds of potato salad
$\qquad$

b. Graph the solutions of the system.
c. Describe all the possible combinations of pounds of salads that Lou could buy.
d. List two possible combinations. $\qquad$

## Practice A

## Solving Systems of Linear Inequalities

Tell whether the ordered pair is a solution of the given system

1. $(4,5) ;\left\{\begin{array}{l}y \leq x+2 \\ y \geq x-1\end{array}\right.$
2. $(1,3) ;\left\{\begin{array}{l}y>3 x \\ y<x+2\end{array}\right.$
3. $(2,3) ;\left\{\begin{array}{l}y<5 x-3 \\ y \geq-x\end{array}\right.$
yes $\qquad$
no $\qquad$
yes

Graph the system of linear inequalities. a. Give two ordered pairs
that are solutions. b. Give two ordered pairs that are not solution
4. $\left\{\begin{array}{l}y \geq x+1 \\ y \leq-2 x\end{array}\right.$
a. $(-1,0)$ and $(-3,2)$
b. $\quad(0,-3)$ and $(4,0)$
5. $\left\{\begin{array}{l}y<2 x+ \\ y>x-1\end{array}\right.$


a. $(0,0)$ and $(1,2)$
a. $(3,3)$ and $(4,4)$
b. ( 1,0 ) and ( $-4,3$ )
b. $(0,0)$ and $(0,3)$
7. Lou is buying macaroni salad and potato salad for a picnic. Macaroni salad costs $\$ 4$ per pound and potato salad costs $\$ 2$ per pound. Lou would like to buy at least 6 pounds of salads and wants to spend no more than $\$ 20$.
a. Write a system of linear equations. Let $x=$ pounds of macaroni salad Let $y=$ pounds of potato salad
b. Graph the solutions of the system.

c. Describe all the possible combinations of pounds of salads that Lou could buy. Any combination represented by the ordered pairs in the solution region.

| d. List two possible combinations. | 2 Ibs mac. salad, 5 lbs potato salad; |
| :--- | :---: |
|  | 3 lbs mac. salad, 4 lbs potato salad |
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## Practice C

## Solving Systems of Linear Inequalities

Tell whether the ordered pair is a solution of the given system

1. $(-2,3) ;\left\{\begin{array}{l}y \leq x+5 \\ y>-2 x-1\end{array}\right.$
2. $(-3,3) ;\left\{\begin{array}{l}y<-x+1 \\ y>x-4\end{array}\right.$
3. $(-1,-2) ;\left\{\begin{array}{l}y>x-2 \\ y<3 x\end{array}\right.$
$\frac{\mathrm{nO}}{\text { Graph the system of linear }}$ that are solutions. b. Give
4. $\left\{\begin{array}{l}y \leq 3 x+2 \\ y \geq-x\end{array}\right.$
a. $(0,2)$ and $(3,0)$

a. $(-2,0)$ and $(0,3)$
a. $(0,1)$ and $(0,0)$
b. $(0,-3)$ and $(-4,0)$
b. $(-4,-2)$ and $(0,-4)$
b. $(4,-4)$ and $(0,-4)$
5. Dennis works at a frozen yogurt store in the summer. He needs to order boxes of small cups and boxes of large cups. The storage room can hold up to 10 more boxes of cups. Each box of small cups costs $\$ 100$ and each box of large cups costs $\$ 150$. A maximum of $\$ 1200$ is budgeted for cups
a. Write a system of linear equations.
$x=$ boxes of small cups,
$y=$ boxes of large cups,

$$
\left\{\begin{array}{l}
x+y \leq 10 \\
100 x+150 y \leq 1200
\end{array}\right.
$$


b. Graph the solutions of the system.
c. Describe all the possible combinations of boxes of cups that Dennis can order.

Any combination of cups represented by the whole number ordered pairs in the solution region.
d. List two possible combinations. 6 small, 4 large; 3 small, 5 large

## Practice B

Solving Systems of Linear Inequalities
Tell whether the ordered pair is a solution of the given system.

1. $(2,-2) ;\left\{\begin{array}{l}y<x-3 \\ y>-x+1\end{array}\right.$
2. $(2,5) ;\left\{\begin{array}{l}y>2 x \\ y \geq x+2\end{array}\right.$
3. $(1,3) ;\left\{\begin{array}{l}y \leq x+2 \\ y>4 x-1\end{array}\right.$
no
yes
no
Graph the system of linear inequalities. a. Give two ordered pairs that are solutions. b. Give two ordered pairs that are not solutions.
4. $\left\{\begin{array}{l}y \leq x+4 \\ y \geq-2 x\end{array}\right.$

5. $\left\{\begin{array}{l}y \leq \frac{1}{2} x+1 \\ x+y<3\end{array}\right.$
 6. $\left\{\begin{array}{l}y>x-4 \\ y<x+2\end{array}\right.$


a. $\frac{(0,3) \text { and }(3,-2)}{\text { b. }(-2,0) \text { and }(-4,3)}$
a. $(0,0)$ and $(-2,0)$
a. $(0,0)$ and $(-2,-2)$
b.
b. $(3,0)$ and $(2,3)$
b. $(-3,3)$ and $(4,0)$
6. Charlene makes $\$ 10$ per hour babysitting and $\$ 5$ per hour gardening. She wants to make at least $\$ 80$ a week, but can work no more than 12 hours a week.
a. Write a system of linear equations.

$$
x=\text { babysitting hours, }
$$

$y=$ gardening hours,
$x+y \leq 12$
$\left\{\begin{array}{l}x+y=12 x+5 y \geq 80 \\ 10 x\end{array}\right.$

b. Graph the solutions of the system.
could work at each job. c. Describe all the possible combinations of hours that Charlene could work at each
Any combination of hours represented by the ordered pairs in the solution region.
d. List two possible combinations
6 h babysitting, 4 h gardening;

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## Reteach

6-6. Solving Systems of Linear Inequalities
You can graph a system of linear inequalities by combining the graphs of the inequalities


For each system below, give two ordered pairs that are solutions and two that are not solutions.


Possible Answers: 2. Sol: $(1,-3)$, $\frac{(-2,-4)}{(3,-3)}$


Graph each system of linear inequalities
3. $\left\{\begin{array}{l}y>x-3 \\ y \geq-x+6\end{array}\right.$
4. $\left\{\begin{array}{l}y<x \\ y>-2 x+1\end{array}\right.$



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