### Lesson 21 Practice Problems

1. Here is a graph of the equation $2y−x=1$.
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	1. Are the points $\left(0,\frac{1}{2}\right)$ and $\left(-7,-3\right)$ solutions to the equation? Explain or show how you know.
	2. Check if each of these points is a solution to the inequality $2y−x>1$:

|  |  |  |  |
| --- | --- | --- | --- |
| * + $\left(0,2\right)$
 | * + $\left(8,\frac{1}{2}\right)$
 | * + $\left(-6,3\right)$
 | * + $\left(-7,-3\right)$
 |

* +
	1. Shade the region that represents the solution set to the inequality $2y−x>1$.
	2. Are the points on the line included in the solution set? Explain how you know.
1. Select **all** coordinate pairs that are solutions to the inequality $5x+9y<45$.
	1. $\left(0,0\right)$
	2. $\left(5,0\right)$
	3. $\left(9,0\right)$
	4. $\left(0,5\right)$
	5. $\left(0,9\right)$
	6. $\left(5,9\right)$
	7. $\left(-5,-9\right)$
2. Consider the linear equation $2y−3x=5$.
	1. The pair $\left(-1,1\right)$ is a solution to the equation. Find another $\left(x,y\right)$ pair that is a solution to the equation.
	2. Are $\left(-1,1\right)$ and $\left(4,1\right)$  solutions to the inequality $2y−3x<5$? Explain how you know.
	3. Explain how to use the answers to the previous questions to graph the solution set to the inequality $2y−3x<5$.
3. The boundary line on the graph represents the equation $5x+2y=6$. Write an inequality that is represented by the graph.
* 
*
1. Choose the inequality whose solution set is represented by this graph.
* 
* 1. $x−3y<5$
	2. $x−3y\leq 5$
	3. $x−3y>5$
	4. $x−3y\geq 5$
1. Solve each system of equations without graphing.
	1. $\left\{\begin{matrix}4d+7e=68\\-4d−6e=-72\end{matrix}\right.$
	2. $\left\{\begin{matrix}\frac{1}{4}x+y=1\\\frac{3}{2}x−y=\frac{4}{3}\end{matrix}\right.$
* (From Unit 2, Lesson 14.)
1. Mai and Tyler are selling items to earn money for their elementary school. The school earns $w$ dollars for every wreath sold and $p$ dollars for every potted plant sold. Mai sells 14 wreaths and 3 potted plants and the school earns $70.50. Tyler sells 10 wreaths and 7 potted plants and the school earns $62.50.
* This situation is represented by this system of equations: $\left\{\begin{matrix}14w+3p=70.50\\10w+7p=62.50\end{matrix}\right.$
* Explain why it makes sense in this situation that the solution of this system is also a solution to $4w+\left(-4p\right)=8.00$.
* (From Unit 2, Lesson 15.)
1. Elena is planning to go camping for the weekend and has already spent $40 on supplies. She goes to the store and buys more supplies.
* Which inequality represents $d$, the total amount in dollars that Elena spends on supplies?
	1. $d>40$
	2. $d\geq 40$
	3. $d<40$
	4. $d\leq 40$
* (From Unit 2, Lesson 18.)
1. Solve this inequality: $\frac{x−4}{3}\geq \frac{x+3}{2}$
* (From Unit 2, Lesson 19.)
1. Which graph represents the solution to $\frac{4x−8}{3}\leq 2x−5$ ?
	1. 
	2. 
	3. 
	4. 
* (From Unit 2, Lesson 19.)
1. Solve $-x<3$. Explain how to find the solution set.
* (From Unit 2, Lesson 20.)



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