Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Algebra Chapter 4 Review**

1. Graph the following inequality below: $y>-\frac{1}{2}x+3$



1. Graph the following system of equations on the grid below.

$$f(x)=2x+6$$

$$g\left(x\right)=\frac{1}{2}x$$

Using the graph, determine when$f\left(x\right)=g(x)$.

1. Graph the system of inequalities. Label the solution area S.

 $y \leq \frac{1}{2} x+2$

 $y < -2x-3$



Determine if the following points are in the solution set:

(-3, -2) (-2, 1) (0, -2) (4,-4)

1. Malia has $500 to purchase water bottles and pairs of socks for a fundraiser for her school’s cross-country team. Water bottles cost $2 each, and socks cost $3 per pair. She needs to buy a total of at least 200 items without buying too many of just one item.
	1. Write a system of linear inequalities to represent the situation, where *x* represents the number of water bottles and *y* represents the number of pairs of socks.
	2. Graph the system of inequalities on the grid below.



* 1. State a possible combination of water bottle and sock pair purchases that would satisfy this scenario.



1. Two pizzas and four sandwiches cost $62. Four pizzas and ten sandwiches cost $140.
	1. Write a system of equations for the above situation.
	2. Using your equations, solve for the cost of pizzas and sandwiches.
2. Which system of equations has the same solution as the system below?



|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1) |  | 2) |  | 3) |  | 4) |  |
|  |  |  |  |  |  |  |  |

1. Nate starts a lawn-mowing business. In his business, he has expenses and revenue. Nate’s expenses are the cost of the lawn mower and gas, and his revenue is $25 per lawn. If his expenses are given by the equation $f\left(x\right)=2x+200$, and income is given by the equation $g\left(x\right)=25x$, at what point will Nate’s revenue be the same as his expenses?
2. Colleen could not figure out how to finish graphing inequalities. Help her finish by determining if she should connect with a solid or dashed line. Then determine shade up or down!



1. MATCH THE DESCRIPTIONS WITH THR GRAPH THAT REPRESENTS IT!

 $x>2$ $y\leq 2$ $y<2$ $y\geq 2$

1. In the graph of an inequality, the area below a dashed line through the points $(-5,2)$ and $(3,2)$ is shaded
2. In the graph of an inequality, the area below a solid line through the points $(-5,2)$ and $(3,2)$ is shaded
3. In the graph of an inequality, the area above a solid line through the points $(-5,2)$ and $(3,2)$ is shaded
4. In the graph of an inequality, the area to the right of a dashed line through the points $(2,-5)$ and $(2, 3)$ is shaded