

Name: \_\_\_\_\_ Date: \_\_\_\_\_

### Study guide Equations

Identify the independent and the dependent variable in each scenario.

- 1) The more tickets I sell, the more money I have.
- 2) Judah brings reusable shopping bags from home whenever he goes to the grocery store. The number of bags he brings is based on how many products are on his shopping list.
- 3) At a deli counter, the price of a customer's order is based on its weight.
- 4) Vera and Elizabeth are going hiking and are trying to figure out how many snacks they should bring with them on the hike. The longer they plan to hike, the more snacks they should bring.
- 5) Amelia is making mushroom tarts for a party. The number of tarts she can make will be determined by how many mushrooms are in the fridge.
- 6) Taylor's dad is building a case for his trophies. The number of trophies will determine how many shelves the case will have.
- 7) The table shows the relationship between the pounds of dough prepared,  $p$ , and the number of hours worked,  $h$ . Write an equation to represent this relationship.

<b>h</b>	<b>p</b>
9	27
10	30
11	33
12	36

- 8) Predict how many pounds of dough will be prepared after 24 hours.

- 9) The table shows the relationship between the minutes Vanessa spends walking,  $m$ , and the number of laps around the track she completes,  $c$ . Write an equation to represent this relationship.

$c$	$m$
3	18
5	30
6	36
8	48

- 10) If she keeps walking at this rate, how many laps will she have completed after 72 minutes?

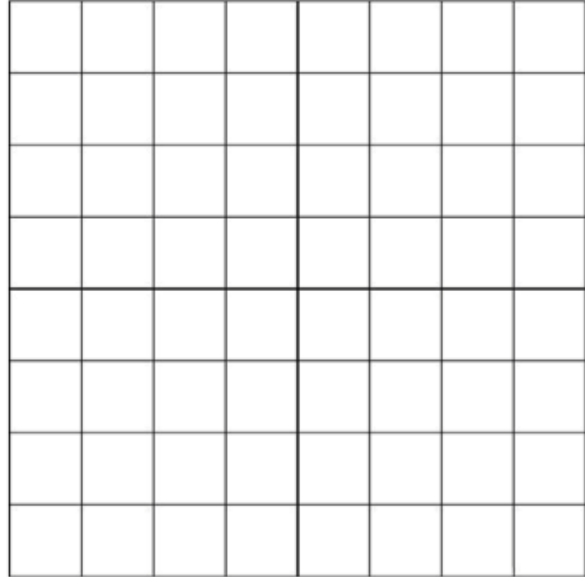
- 11) The following table represents the equation  $y = x - 4$ . Fill in the missing values.

$x$	$y$
5	
7	
	24
	30

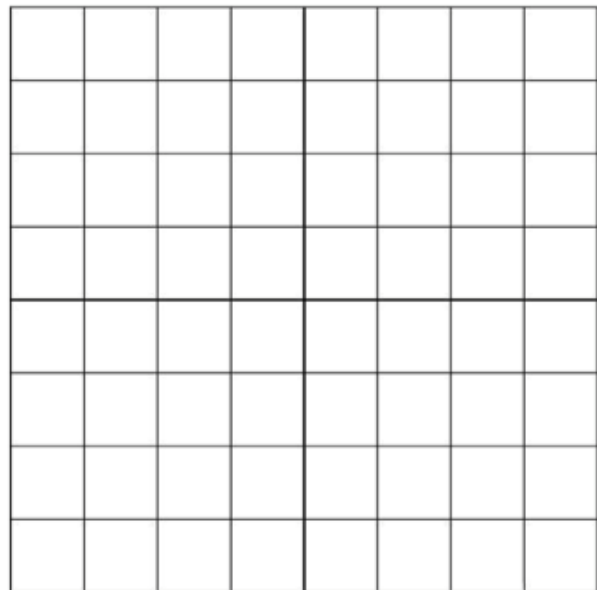
- 12) Ella's birthday party costs \$3 for every guest she invites. Write an equation that shows the relationship between the guests,  $g$ , and the cost,  $c$ . Then complete the table.

$g$	$c$
5	
10	
15	
20	

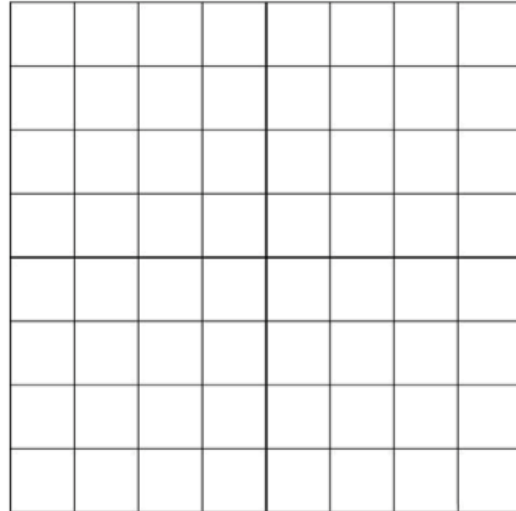
13) Harry rides his bike at an average rate of 15 miles per hour. Write an equation that shows the relationship between the distance,  $d$ , that Harry rides and the number of hours,  $h$ , that he rides. Complete the table to represent this scenario. Then graph the function. Be sure to label your table and graph.

14) The town parking meters charge \$0.50 for every hour of parking. Write an equation that shows the relationship between the cost of parking,  $c$ , and the number of hours paid for,  $h$ . Complete the table to represent this scenario. Then graph the function. Be sure to label your table and graph.

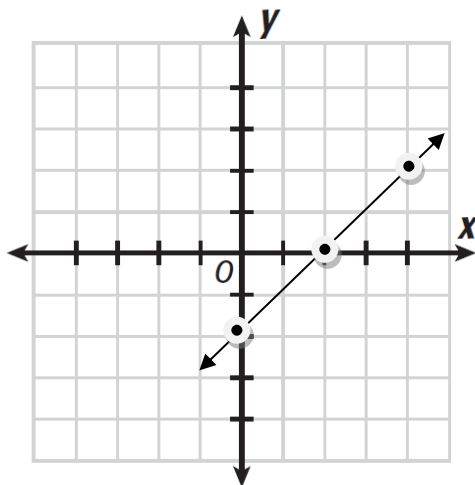



15) Each bag contains 20 lollipops. Write an equation that shows the relationship between the number of bags,  $b$ , and the number of lollipops,  $n$ . Complete the table to represent this scenario. Then graph the function. Be sure to label your table and graph.

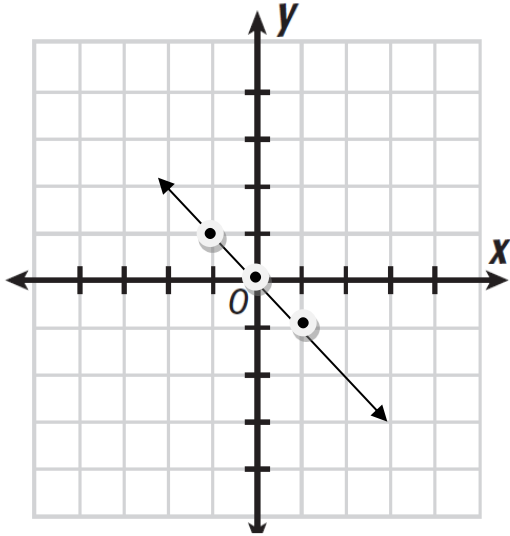



16. In the state of Illinois, you can get a driver's license at 16. Write and graph an inequality to represent this scenario.

17. Explain the change in  $y$  as  $x$  increases by 2.



18. Explain the change in  $y$  as  $x$  increases by 1



19. Maria is twice as old as Emily. Maria is 12, how old is Emily. Prove that your answer is correct.

20. Jackie has 5 more pieces of candy than Jan. If Jan has 12 pieces of candy, how much does Jackie have? Prove that your answer is correct.

21. Alex and his two friends went to dinner. Each person paid \$12.10. How much was the bill?

22. George had three less baseball cards after the trade. He now has 15. How many baseball cards did he have to start with?