

**Math 6 - Unit 4: Equations & Inequalities**

Study Guide – End of Unit Test

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

Class Period: 1 2 3 4 Date: \_\_\_\_\_

**Solve the equations below. Show all of your work, including the check.**

1.  $\frac{1}{5}x = 42$

**$x = 210$**

2.  $67 + c = 183$

**$x = 116$**

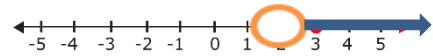
4.  $j - 5.6 = 4.6$

**$x = 10.2$**

3. Jennifer spent \$8.99 on a bag of Jolly Ranchers that cost  $x$  dollars apiece. If there were 110 Jolly Ranchers in the bag, write an equation that could be solved using inverse operations to find out how much each Jolly Rancher would cost. (You do not need to solve the equation.)

**$110x = 8.99$**

4. Write a situation that could describe the following inequality graph.

**Answers will vary.**

5. Write an inequality to represent the fact that there are **at least** 13 questions on your test.

**$x \geq 13$**

6. Write an inequality to represent that there are **more than** 125 cars in the parking lot.

**$x > 125$**

7. Gabriel wants to solve the equation,  $\frac{3}{4}m = 25$ .

Which step should he **do to isolate  $m$**  on one side of the equation?**Divide by  $\frac{3}{4}$  on both sides.**

8. Judy spent **\$5.67** on oranges that cost **\$0.63 each**. If  $x$  = the number of oranges, write an equation that would determine how many oranges Judy purchased?

**$0.63x = 5.67$**

9. Write one possible solution and one non-solution to the inequality,  $x > 4$ .

**Answers will vary. A solution would be any number bigger than 4. A non-solution would be any number 4 or smaller.**

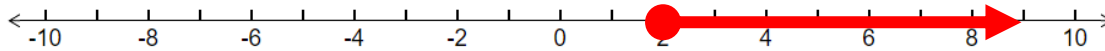
10. Explain how to solve an equation.

**First you use inverse operations to isolate the variable. Then you use the solution you get to substitute back into the equation to prove that you got the answer correct.**

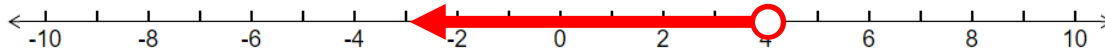
11. Complete the table to satisfy the equation,  $y=12x$

x	0	1	2	<b>4</b>	5
y	0	<b>12</b>	<b>24</b>	48	<b>60</b>

12. What inequality is graphed on the number line?  $x \geq 2$



13. What inequality is graphed on the number line?  $x < 4$



14. Julia paid **\$140** for **7 gift cards**. Each gift card was the same price. Write an equation that represents the situation and find the **price of each gift card**?  $7x = 140$ ;  $x = \text{\$20 per gift card}$

15. A music teacher bought 17 recorders of equal price. She spent a total of \$51. The equation  $17r = 51$  can be used to find  $r$ , the price of each recorder in dollars. What was the price of each recorder? **\$3 per recorder**

16. Mrs. Katz bought chick-fil-a biscuits for her homeroom and spent a total of \$160. If each biscuit cost \$5, write an equation that you could use inverse operations to solve and solve it to find out how many biscuits Mrs. Katz bought.  $5x = 160$ ;  $x = 32$  biscuits

17. Which **solution** makes the **equation true**?  $x - 6.5 = 19$   $x = 25.5$

For **questions 19-21**, determine whether the given value is a solution of the equation by selecting **true** or **false**.

18.  $25 = \frac{k}{3}$  for  $k = 3$

- a. TRUE      b. FALSE

19.  $0.7y = 49$  for  $y = 70$

- a. TRUE      b. FALSE

20. **Opposite** operations that “undo” each other are called **inverse operations**.

21. Which step should be taken to **isolate the variable** in the following equation?

$$213n = 1418$$

**Divide by 213 on both sides of the equation.**