# Math 6 - Unit 4: Equations & Inequalities

Name: _____

*Study Guide - Mid-Unit Test*

Class Period: 1 2 3 4 Date: _____

**MULTIPLE CHOICE**

*Identify the choice that best completes the statement or answers the question.*

1. Which step should be taken to **isolate the variable** in the following equation? $\frac{d}{8} = 126$
2. Solve the following equation: $67 + c = 183$
3. Solve the following equation: $j - 5.6 = 4.6$
4. Solve the following equation: $11n = 28.6$
5. Solve the following equation: $\frac{k}{21} = 7$
6. Solve the following equation: $\frac{a}{5} = 123$
7. Gabriel wants to solve the equation $\frac{5}{8}m = 25$.
   Which step should he **do to isolate *m*** on one side of the equation?
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?
9. Maya bought a **16.7-pound** turkey for Thanksgiving this year. The equation $p - 16.7 = 2.5$ gives the weight *p*, in pounds, of the turkey she bought last Thanksgiving. How much did the turkey weigh last year?
10. Jen's basketball team scored **62 points in its last game.** Jenna **scored 15 of the points**. Write an equation that could be used to determine the number of points *p* scored by Jenna's teammates?
11. What is the **solution** to $7f = 833$?
12. Which **value** makes **the equation below true**? $\frac{d}{9} = 8.1$
13. Julia paid **$140** for **7 gift cards**. Each gift card was the same price. Write an equation that that represents the situation and find the **price of each** gift card?
14. 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?
15. Last week Randy worked **62 hours** in **7 days**. Write an equation that Randy could use to find the average number of hours he worked **each day**?
16. **Andrea and two friends** went to Taco Mac for lunch. They decided to **split their bill evenly**. If they each paid $12, write an equation that would represent the **cost of their bill** and find out how much they spent in total.
17. Jason has a collection of 18 model planes. His father added to the collection, and the number of planes Jason now has can be modeled by the equation $\mathbf{18 + p = 42}$, where *p* represents the number of new planes. How many new planes did Jason's father give him?
18. Which **solution** makes the **equation true**? $x - 6.5 = 19$

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

19. $33 = x - 25$ for x = 52

    a. TRUE  b. FALSE

20. $25 = \frac{k}{3}$ for $k = 3$

    a. TRUE  b. FALSE

21. $0.7y = 49$ for $y = 70$

    a. TRUE  b. FALSE

22. Silly Sally solved the equation for x and shows her solution below. **What should Silly Sally do to correct her mistake?**

$$36 + x = 54$$

$$\begin{array}{r} 36 + x = 54 \\ \underline{-36 \qquad +36} \\ x = 90 \end{array}$$

23. **Opposite** operations that "undo" each other are called _____.

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

$$213n = 1418$$

25. Write a situation that **can** be represented by the equation $x + 5 = 17$?

26. Solve for *x*: $\frac{1}{4}x = 16$

27. Simplify the expression: $6(3x + 4) - 2x + 10y + 5$

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

*Study Guide - Mid-Unit Test* ***ANSWER KEY***

Class Period: 1 2 3 4 Date: _____

## MULTIPLE CHOICE

*Identify the choice that best completes the statement or answers the question.*

1. Which step should be taken to **isolate the variable** in the following equation? $\frac{d}{8} = 126$
   **Multiply both sides by 8.**
2. Solve the following equation: $67 + c = 183$ **c = 116**
3. Solve the following equation: $j - 5.6 = 4.6$ **j = 126.2**
4. Solve the following equation: $11n = 28.6$ **n = 2.6**
5. Solve the following equation: $\frac{k}{21} = 7$ **k = 147**
6. Solve the following equation: $\frac{a}{5} = 123$ **a = 615**
7. Gabriel wants to solve the equation $\frac{5}{8}m = 25$. **Divide both sides by 5/8.**
   Which step should he **do to isolate *m*** on one side of the equation?
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. Maya bought a **16.7-pound** turkey for Thanksgiving this year. The equation $p - 16.7 = 2.5$ gives the weight *p*, in pounds, of the turkey she bought last Thanksgiving. How much did the turkey weigh last year? **19.2 lbs.**
10. Jen's basketball team scored **62 points in its last game.** Jenna **scored 15 of the points**. Write an equation that could be used to determine the number of points *p* scored by Jenna's teammates? **x + 15 = 62**
11. What is the **solution** to $7f = 833$? **F = 119**
12. Which **value** makes **the equation below true**? $\frac{d}{9} = 8.1$ **d = 72.9**
13. Julia paid **$140** for **7 gift cards**. Each gift card was the same price. Write an equation that that represents the situation and find the **price of each** gift card? **7x = 140; $20 per gift**
14. 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? **Each recorder cost $3.**
15. Last week Randy worked **62 hours** in **7 days**. Write an equation that Randy could use to find the average number of hours he worked **each day**? **7x = 62**
16. **Andrea and two friends** went to Taco Mac for lunch. They decided to **split their bill evenly**. If they each paid $12, write an equation that would represent the **cost of their bill** and find out how much they spent in total. **x/3 = 12**
17. Jason has a collection of 18 model planes. His father added to the collection, and the number of planes Jason now has can be modeled by the equation $\mathbf{18 + p = 42}$, where *p* represents the number of new planes. How many new planes did Jason's father give him? **24 planes**
18. Which **solution** makes the **equation true**? $x - 6.5 = 19$ **25.5**

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

19. $33 = x - 25$ for x = 52

    a. TRUE  b. FALSE

20. $25 = \frac{k}{3}$ for $k = 3$

    a. TRUE  b. FALSE

21. $0.7y = 49$ for $y = 70$

    a. TRUE  b. FALSE

22. Silly Sally solved the equation for x and shows her solution below. **What should Silly Sally do to correct her mistake?** **Silly Sally should have subtracted on both sides, instead she added.**

    36 + x = 54

    36 + x = 54
    -36 +36
    x = 90

23. **Opposite** operations that "undo" each other are called **Inverse Operations**.

24. Which step should be taken to **isolate the variable** in the following equation? **Divide both sides by 213.**

$$213n = 1418$$

25. Write a situation that **can** be represented by the equation $x + 5 = 17$? **There were five friends at a party. Some more friends joined them and then there were 17 friends at the party. How many friends joined the party?**

26. Solve for x: $\frac{1}{4}x = 16$ **x = 64**

27. Simplify the expression: 6(3x + 4) – 2x + 10y + 5 **16x + 10y + 29**