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

Mr. Tallman Math 7-8A

**Do Now**

**Fill in the blank with a number to make each equation true.**

|  |  |  |
| --- | --- | --- |
| 1) \_\_\_\_\_\_\_\_ + 3 = 14 | 2) \_\_\_\_\_\_\_\_\_$-6=20$ | 3) $10-$\_\_\_\_\_\_\_\_\_\_ = $-4$ |

**Fill in the blank with a number to make each equation true.**

|  |  |  |
| --- | --- | --- |
| 4) \_\_\_\_\_\_\_ $∙6=48$ | 5) $30÷$\_\_\_\_\_\_\_\_\_\_\_ $=-5$ | 6) $3∙$\_\_\_\_\_\_\_\_\_ $=-27$ |

**Lesson #9 – Solving One-Step Equations**

**Equations** are mathematical sentences in which two **expressions are equal**.

**Algebraic Equations** are equations that involve both numbers and variables.

 Examples of **Algebraic Equations**:

We use different mathematical properties in order to solve an equation for a given variable.

**Addition Property of Equatlity:** If A = B, then A + C = B + C

Example 1) Solve and check: x – 5 = 13

**Subtraction Property of Equality**: If A = B, then A – C = B – C

Example 2: Solve and Check: x + 10 = 26

**Division Property of Equality**: If A = B, then $\frac{A}{C}=\frac{B}{C}$

Example 3) Solve and Check: -8y = 48

**Multiplication Property of Equality:** If A = B, then $A×C=B×C$

Example 4) Solve and Check: $\frac{x}{3}=17$

Example 5)

Part A: Sean solved the equation 6x = 72. What mathematical property did Sean use to find the solution?

Part B: Solve the equation from Part A.

**Now, You Try!**

**Directions: Solve and Check each equation. Write the mathematical property used to solve.**

|  |  |
| --- | --- |
| 1) $8 = -4 + x$ | 2) $-9=\frac{x}{-6}$ |
| 3) $-1 = x – 15$ | 4) $-8x = 56$ |
| 5) $\frac{x}{-7}=7$ | 6) $-11 + x = -15$ |
| 7) $-150 = 15x$ | 8) $20 = x + 10$ |

9) Which mathematical property would be used to solve the equation $\frac{x}{8}= -12$ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10) Allison said that -3 is the solution to the equation $3x=9$. Is Allison correct?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Justify your answer.

11) Tom owed his friend $15. He paid his friend back some money. After he paid his friend back some money, he only owed his friend $9.

Part A) Write an equation that models this situation. Be sure to include a let statement.

Part B) Solve your equation from part A to determine how much money Tom paid back.

12) The temperature in the morning at MAMS was $70°$F. The temperature increased by a certain amount and at the end of 9th period, the temperature was $81°$. Set up and solve an equation to determine how much the temperature increased. Be sure to write a let statement.

13) Josh saved $10 dollars a week for a certain number of weeks in order to pay for a new video game. The video game costs $60.

Part A) Write an equation that models this situation. Be sure to include a let statement.

Part B) Solve your equation from part A to determine how many weeks Josh needs to save money to pay for the video game.

14) Jordan wants to sign up for a certain music streaming service. That music streaming service costs $9 per month for unlimited streaming without ads. After a certain number of months, Jordan paid $81 and then canceled his subscription. Write and solve an equation to determine for how many months his subscription was active. Be sure to include a let statement.