

2.4 EXTRA NOTES – MORE PRACTICE WITH ALGEBRAIC PROPERTIES OF EQUALITY (=)

NAME THAT PROPERTY!

Directions: Match the statements with the properties of equality.
Properties will be used more than once.

_____ 1. If $k = 3$, then $3 = k$

_____ 2. If $2x = 14$, then $x = 7$

_____ 3. $4 = 4$

_____ 4. If $-5x - 1 = -11$, then $-5x = -10$

_____ 5. If $10a = 2b$ and $2b = c$, then $10a = c$

_____ 6. $-7(x - 4) = -7x + 28$

_____ 7. If $6y = 24$, then $6y - 3 = 24 - 3$

_____ 8. If $10x + w = 41$ and $w = 1$, then $10x + 1 = 41$

_____ 9. If $\frac{y}{2} = -10$, then $y = -20$

_____ 10. If $3x = 2y$ and $2y = z$, then $3x = z$

_____ 11. If $7m = 35$, then $7m + 4 = 35 + 4$

_____ 12. If $-2x = 18$, then $18 = -2x$

_____ 13. Given $3x^2 + 1$, if $x = 5$, then $3(5)^2 + 1$

_____ 14. If $m = -2$, then $8m = -16$

_____ 15. $10y = 10y$

_____ 16. $5x + 8x = x(5 + 8)$

A. Addition Property of Equality

B. Subtraction Property of Equality

C. Multiplication Property of Equality

D. Division Property of Equality

E. Distributive Property

F. Substitution Property

G. Reflexive Property

H. Symmetric Property

I. Transitive Property

Name: _____

Unit 2: Logic & Proof

Date: _____ Bell: _____

Homework 6: Algebraic Proof



**** This is a 2-page document! ****

Directions: Name the property of equality that justifies each statement.

- _____ 1. If $a = 2b$, then $a - c = 2b - c$
- _____ 2. $x = x$
- _____ 3. $3(p - 7) = 3p - 21$
- _____ 4. If $-7k = -42$, then $k = 6$
- _____ 5. If $m + n = 15$ and $n = 2$, then $m + 2 = 15$
- _____ 6. If $\frac{x}{4} = -5$, $x = -20$
- _____ 7. If $w^2 = 2x$ and $2x = y$, then $w^2 = y$
- _____ 8. If $c - 9 = -1$, then $c = 8$
- _____ 9. If $n = -3$, then $-3 = n$

- A. Addition Property of Equality
- B. Subtraction Property of Equality
- C. Multiplication Property of Equality
- D. Division Property of Equality
- E. Distributive Property
- F. Substitution Property
- G. Reflexive Property
- H. Symmetric Property
- I. Transitive Property

Directions: Complete each proof using the properties of equality. Not all rows may be used.

10. Given: $-8(x - 3) = -32$; **Prove:** $x = 7$

Statements	Reasons

11. Given: $-16 = \frac{m}{5} - 18$; **Prove:** $m = 10$

Statements	Reasons