Algebra 1 Summer Work

Name _____

Order of Operations with Integers

Simplify using order of operations and the rules for signed numbers.

1. $6^2 + (-14) \div 2 - (-8)$

2. $(-12)^2 \div 4 - 3 \cdot 2^4$

3. $4(6 - 9) \div 6 + (-15)$

4. $[5 \cdot 3 - (-3)^3] + (-8)$

5. $2^3 - 6 \cdot 2 + 3 - (-5)$

6. $4 \cdot 5 - 10 + (-2)(1 - 2) + 5$

7. $8 - 3 \cdot 2 - 33 \div 11$

8. $7 - 3(4 - 5) - 21$

9. $9 \div 3 + 7 \cdot 4 \div (-2)$

10. $12 \div (-6) + 5^2 \cdot 3$

11. $-6 \times 8 - (4^2 + 2) + 72 \div (-8)$

12. $5 \cdot 2^2 - 2^3(-6 + 3)$

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Multi-Step Equations

Directions: Show the line-by-line work to solve each equation. Remember to use inverse operations isolate the variable.

1. $8x + 7 = 31$

2. $-9x + 1 = -80$

3. $2n + 10 = -2$

4. $\frac{n}{5} + 4 = 0$

5. $6w + 5w = -11$

6. $-6n - 2n = 16$

7. $8m + 13m = 63$

8. $-4x + 16 = 12$

9. $-2 + 5x + 30 = -37$

10. $10 + 30n = -80$

11. $x + 11 + 8x = 29$

12. $15m + 4 - 9m = -32$

13. $10w + 5(a - 3) = 15$

14. $\frac{x+9}{3} = 8$

15. $-5x - 2x = 84$

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Combining Like Terms

Directions: Simplify each expression.

1. $5x - 2x - 3x + 4x$

2. $4y - 12y + 7y - 6y$

3. $9n - 6n + 4n - 7n$

4. $3m - 5m + 4m$

5. $19 + 15bc - bc + 2$

6. $3x - 7x - 9x + 20$

7. $3a - 4b - 5a + 8b$

8. $5y - y + 10x - 3x$

9. $6x - 3x + 7y + 2y - 8z + 3z$

10. $5(x + 2y) - 5y$

11. $10 + 3(5m - 6) + 10m$

12. $10x - 4(x + 3) + 2(10 - 5x)$