

Name: _____

Basic Algebra

Simplify the following by using the Distributive Property.

1. $3(4x + 6)$

2. $-(9p - 10)$

3. $-2(-3n - 10)$

Simplify the following by combining like terms. Change subtraction to addition and use the distributive property to remove any parenthesis if necessary.

4. $4x + 8 + 4x$

5. $8n + 5 + 7n + 2$

6. $6b + 3(2b + 1) + 8$

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7. $7y + 2x - 8y + 4x$

8. $5(2n + 4) - 2(7n + 6)$

9. $5p - 7 - 8p - 3$

Solve each equation by either adding or subtracting. Show all work! Check Answer.

10. $7 = m + 2$

11. $x - 3 = 10$

12. $y - 2 = -5$

Check:

Check:

Check:

Solve each equation by multiplying or dividing. Show work! Check answer.

13. $20 = 2x$

14. $-5y = 10$

15. $-4p = -16$

Check:

Check:

Check:

16. $\frac{x}{4} = 2$

17. $\frac{n}{-5} = 3$

18. $\frac{t}{7} = -4$

Check:

Check:

Check:

Write an equation and solve.

19. y minus 10 is 20

20. negative four equals x plus 2

21. 5 less than n is 10

22. The product of 5 and x is 20

Write an equation for the following situations. Then solve the equation.

23. The admission price to a football game increased by \$8.00 to \$45.00. Let p be the original purchase price. Fill in the blanks to write an equation to model the situation. Then solve the equation.

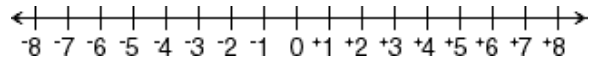
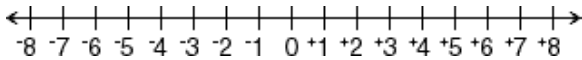
$$p + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

24. Jerry's Car Wash lowered prices for the fall season. The cost of a wash decreased by \$2.00 to \$5.00. Let p be the original price. Write an equation to model the situation. Then solve the equation.

Solve each inequality and graph on the number line. Show all work! (3 points each)

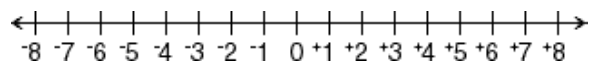
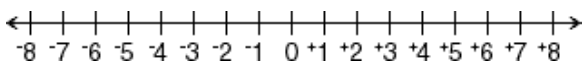
25. $m + 2 < 6$

26. $x - 3 \geq 0$



27. $\frac{x}{2} \geq -2$

28. $-3x < 18$



Simplify.

29. $3x + 2y + 3z + 1 + 5x + 2y + 5z + 1 + 5 + 2z + 3y + 5x$

30. $3x - 2y + 3z - 1 + 5x - 2y - 5z + 1 - 5 + 2z - 3y + 5x$

31. $5(4x + 3) - 3(5x - 1) + 3(4x - 5) - 4(-2x - 5)$