NAME _____

Lesson 3.4 Solving Complex 1-Variable Equations

Sometimes like terms in equations have to be combined in order to solve the problem. When terms have the same variable raised to the same exponent, they can be added or subtracted. Other times, you can use the Distributive Property to combine terms.

Adding or Subtracting Like Terms

$2x + 3x = 75$

$5x = 75$

$5x \div 5 = 75 \div 5$

$x = 15$

Using the Distributive Property to Combine Terms

$2(x + 3) = 46$

$2x + 6 = 46$

$2x + 6 - 6 = 46 - 6$

$2x \div 2 = 40 \div 2$

$x = 20$

Find the value of the variable in each equation by combining like terms.

	a	b
1.	$3x + 4 + 2x + 5 = 34$ _____	$2(x + 1) + 4 = 12$ _____
2.	$\frac{1}{2}(x + 8) - 15 = -3$ _____	$2x - 5 + 3x + 8 = 18$ _____
3.	$-185 = -3r - 4(-5r + 8)$ _____	$-5t - 2(5t + 10) = 100$ _____
4.	$-4b - 4(-6b - 8) = 172$ _____	$-3p + 2(5p - 12) = -73$ _____
5.	$-3f + 3(-3f + 5) = -81$ _____	$-43 = -5c + 4(2c + 7)$ _____
6.	$-5s + 3(5s + 2) = 126$ _____	$4d + 2(4d + 7) = -106$ _____
7.	$103 = -2u + 3(-3u + 5)$ _____	$-2n + 2(3n + 14) = -20$ _____
8.	$-11 = 5y + 4(-y - 4)$ _____	$-5a - 2(-7a - 10) = 128$ _____
9.	$\frac{1}{2}(c + 5) - 10 = -4$ _____	$-4f + 2(4f - 5) = -19$ _____
10.	$2(v + 4) + 6 = 24$ _____	$-9 = 6h + 3(-h - 3)$ _____
11.	$-6p - 8(4p + 8) = 98$ _____	$7c + 3(3c + 5) = -103$ _____
12.	$-4s + 2(4s + 1) = 125$ _____	$-3n + 3(4n + 15) = -21$ _____