NAME _____

Lesson 3.4 Solving Complex 1-Variable Equations

Some problems with variables require more than one step to solve. Use the properties of equality to undo each step and find the value of the variable.

$$2n - 7 = 19$$

First, undo the subtraction by adding.

$$2n - 7 + 7 = 19 + 7 \quad 2n = 26$$

Then, undo the multiplication by dividing.

$$n = 13$$

$$\frac{n}{3} + 5 = 11$$

First, undo the addition by subtracting.

$$\frac{n}{3} + 5 - 5 = 11 - 5 \quad \frac{n}{3} = 6$$

Then, undo the division by multiplying.

$$\frac{n}{3} \times 3 = 6 \times 3 \quad n = 18$$

Find the value of the variable in each equation.

	a	b	c
1.	$2n + 2 = 16$ _____	$\frac{a}{3} - 1 = 4$ _____	$\frac{b}{4} + 2 = 11$ _____
2.	$11p - 5 = 28$ _____	$8b + 12 = 52$ _____	$\frac{r}{20} - 3 = 3$ _____
3.	$\frac{m}{16} + 7 = 10$ _____	$6n + 4 = 64$ _____	$4s - 5 = 39$ _____
4.	$\frac{a}{9} - 3 = 6$ _____	$5d + 6 = 71$ _____	$\frac{m}{8} + 5 = 14$ _____
5.	$9a - 11 = 61$ _____	$\frac{e}{12} - 7 = 3$ _____	$\frac{i}{4} + 5 = 73$ _____
6.	$3p + 12 = 54$ _____	$\frac{n}{3} + 12 = 27$ _____	$5b - 7 = 93$ _____
7.	$\frac{s}{15} + 1 = 5$ _____	$6x + 25 = 73$ _____	$\frac{a}{3} - 3 = 11$ _____
8.	$3r - 11 = 43$ _____	$\frac{x}{7} + 14 = 22$ _____	$5m + 13 = 68$ _____
9.	$\frac{n}{5} - 5 = 8$ _____	$\frac{a}{6} + 4 = 20$ _____	$3p - 15 = 48$ _____