## **Solve Multi-Step Equations**



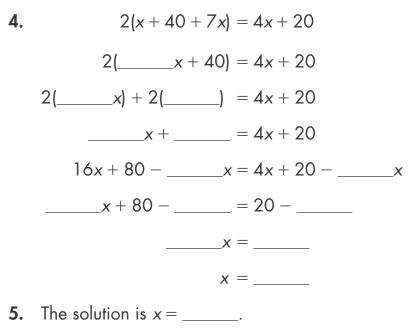
Use the Distributive Property to solve the equation 3(x-7) = 2x + 4 for x.

1. 3(x-7) = 2x + 4 ( )(x) + ( )(-7) = 2x + 4 x - = 2x + 4 x - = 2x + 4 x - = 2x + 4 - 2x + 4 - 2x + 4 - 2x + 5 x - = -2x + 4 - 2x + 4 - 2x + 5Subtract 2x from both sides. x - = -2x + 4 - 2x + 4 - 2x + 5Subtract 2x from both sides. x - = -2x + 4 - 2x + 4 - 2x + 5Subtract 2x from both sides. x - = -2x + 4 - 2x + 4 - 2x + 5Subtract 2x from both sides. x - = -2x + 4 - 2x + 4 - 2x + 5Subtract 2x from both sides. x - = -2x + 4 - 2x + 4 - 2x + 5Subtract 2x from both sides. x - = -2x + 4 - 2x + 4 - 2x + 5Subtract 2x from both sides.

- **2.** The solution is x =\_\_\_\_\_.
- **3.** Check. Substitute the solution into the equation for *x*.

$$3(x-7) = 2x + 4$$
  
 $3(\_____ - 7) = 2(\_____) + 4$   
 $3(\_____) = \____ + 4$   
 $\____ = \____$ 

Solve 2(x + 40 + 7x) = 4x + 20 for x.



Combine like terms inside the parentheses.

Use the Distributive Property.

Subtract 4x from both sides.Subtract 80 from both sides.

Divide both sides by 12.

## Solve Multi-Step Equations (continued)



Solve each equation for x.

6.	-4x + 3x + 2 = 6	7.	6-x-3x=-10	8.	3 + 3x + 5 + 4x = 29
9.	4x+6=x+12	10.	$\overline{6x-6}=3(x+2)$	11.	5x+8=x+2x-2
12.	3(x-6)+9x=30	13.	4(2x+3x+8) = 72	14.	-3(3x-5)+4x=30
15.	7x - 18 = 3x + 6	16.	2x+4=x+3(x+2)	17.	5x-8=x+2(x-2)
18.	2(6x-4)+8=36	19.	$\frac{1}{2}(x-8) = 14$	20.	3(1.5x-4) = 6
21.	$\frac{1}{4}(x+8) = x+2$	22.	4.2(x-2) = x+2	23.	2.3(2x+4) = 0.6x+10
24.	$\frac{5(3x+2x+10)}{=150}$	25.	$ \frac{12 + 4x - 2}{= 3(x + 6) - x} $	26.	$\frac{16 + 8(x + 3) - 2x}{= 82}$
27.	3(5x+6x-10) = 5(2x+40)	28.	$ \frac{4+7(x+4)}{=2(x+4)+x} $	29.	$\frac{\frac{1}{2}(4x + 16 + 6x)}{= 17x + 2}$

**30. Reasoning** What is the first step when solving the equation 8(6x - 4) + 10 = 74?