# Algebra I  Worksheet #6  Unit 2  Selected Solutions

Complete the table for each input-output chart shown.

|  | 2. | 4. |
|---|---|---|
| **Input** | $4x + 10 = 30$ | $8x - 12 = 52$ |
| ↓<br>**First Operation** | subtract 10 from both sides | add 12 to both sides |
| ↓<br>**Output** | $4x = 20$ | $8x = 64$ |
| ↓<br>**Second Operation** | divide both sides by 4 | divide both sides by 8 |
| ↓<br>**Output** | $x = 5$ | $x = 8$ |

Solve the following equations.  Show your steps.

**11.**  $2x + 23 = 79$
$\phantom{2x}\underline{-23 \quad -23}$
$\dfrac{2x}{2} = \dfrac{56}{2}$
$x = 28$

**12.**  $9x - 30 = 24$
$\phantom{9x}\underline{+30 \quad +30}$
$\dfrac{9x}{9} = \dfrac{54}{9}$
$x = 6$

Write an algebraic expression for each of the following.

19.   the value in cents of n nickels:   __5n__

22.   Cindy and John have marbles.  The number that Cindy has is three times the number that John has.  If x represents the number of marbles that John has, then represent the number that Cindy has in terms of x.   __3x__

23.   Cindy and John have marbles.  The number that Cindy has is four less than three times the number that John has.  If x represents the number of marbles that John has, then represent the number that Cindy has in terms of x.   __3x – 4__