Algebra II Worksheet #2 Unit 1 selected solutions

Simplify each of the following expressions.

1.
$$3(5x + 7) + 2(3x - 5) = 21x + 11$$

(15x + 21) + (6x - 10)
3. $5(x - 7) - 3(2x + 3) = -x - 44$
(5x - 35) + (-6x - 9)

Solve each of the following equations. Show your process steps neatly organized.

7.
$$2x + 2(2x - 3) = 36$$

 $2x + 4x - 6 = 36$
 $6x - 6 = 36$
 $6x = 42$
 $x = 7$
10. $5(2x - 1) - 8(x + 1) = 4(2x + 3) - 2(5x - 3)$
 $(10x - 5) + (-8x - 8) = (8x + 12) + (-10x + 6)$
 $2x - 13 = -2x + 18$
 $4x = 31$
 $x = \frac{31}{4}$

Solve each of the following for the indicated variable. Show your process steps neatly organized.

13. y = m(x - a) + c solve for a y = mx - am + c am = mx + c - y $a = \frac{mx + c - y}{m}$ 14. R(a + b) = ab solve for b Ra + Rb = ab Ra = ab - Rb Ra = (a - R)b $b = \frac{Ra}{a - R}$

Solve each of the following word problems algebraically. Show your process steps neatly organized. (Use only one variable in your solutions please.)

23. The cost of a burger is 9 cents more than twice the cost of a soda. The cost of a hot dog is 24 cents more than the cost of a soda. If 3 burgers, 7 hotdogs and 10 sodas cost a total of \$14.60, then what is the cost of each item?

		3(2x+9) + 7(x+24) + 10x = 1460
	cost each	6x + 27 + 7x + 168 + 10x = 1460
soda:	x cents	23x + 195 = 1460
burger:	2x + 9 cents	23x = 1265
hot dog:	x + 24 cents	x = 55
		2x + 9 = 119
		x + 24 = 79

A soda costs 55¢, a burger costs \$1.19, and a hot dog costs 79¢.