

## Answer Key

HW # \_\_\_\_\_

1.

Coins	Value	Qty	\$
nickels	5	x	5x
dimes	10	x + 5	10(x + 5)
quarters	25	x - 16	25(x - 16)

x: # of nickels

x + 5: # of dimes

x - 16: # of quarters

$$5x + 10(x + 5) + 25(x - 16) = 450$$

$$5x + 10x + 50 + 25x - 400 = 450$$

$$40x - 350 = 450$$

$$40x = 800$$

$$x = 20$$

**20 nickels, 25 dimes, 4 quarters**

3.

Stamps	Value	Qty	\$
.05 stamp	5	x	5x
.20 stamp	20	40 - x	20(40 - x)

x: # of 5 cent stamps

40 - x: # of 20 cent stamps

$$5x + 20(40 - x) = 575$$

$$5x + 800 - 20x = 575$$

$$-15x + 800 = 575$$

$$-15x = -225$$

$$x = 15$$

**Colleen bought 15 stamps worth \$0.05 each and 25 stamps worth \$0.20 each**

2.

Coins	Value	Qty	\$
nickels	5	x	5x
dimes	10	25 - x	10(25 - x)

x: # of nickels

25 - x: # of dimes

$$5x + 10(25 - x) = 165$$

$$5x + 250 - 10x = 165$$

$$-5x + 250 = 165$$

$$-5x = -85$$

$$x = 17$$

**17 nickels, 8 dimes**

4.

Tickets	Value	Qty	\$
children	5	x	5x
adult	8	2x - 50	8(2x - 50)

x: # of children tickets sold

2x - 50: # of adult tickets sold

$$5x + 8(2x - 50) = 5900$$

$$5x + 16x - 400 = 5900$$

$$21x - 400 = 5900$$

$$21x = 6300$$

$$x = 300$$

**300 children tickets were sold and 550 adult tickets were sold**

5.

Candy	Value (\$/lb)	Qty (lbs)	\$
Candy A	12	x	12x
Candy B	19	70 - x	19(70 - x)

x: # of lbs of candy A

70 - x: # of lbs of candy B

$$12x + 19(70 - x) = 15(70)$$

$$12x + 1330 - 19x = 1050$$

$$-7x + 1330 = 1050$$

$$-7x = -280$$

$$x = 40$$

**40 pounds of candy A worth \$12/lb. and 30 pounds of candy B worth \$19/lb.**