Solve each system of equations with algebra.

1.

$y = 3x - 8$

$4x - 6y = -22$

$4x - 6(3x - 8) = -22$

$4x - 18x + 48 = -22$

$-14x + 48 = -22$

$-48 \quad -48$

$\frac{-14x = -70}{-14x}$

$x = 5$

$y = 3(5) - 8$

$15 - 8$

$y = 7$

$(5, 7)$

2.

$2(9a + 7c = 29)$

$3(6a - 5c = -58)$

$18a + 14c = 58$

$18a - 15c = -174$

$\frac{29c = 232}{29}$

$c = 8$

$9a + 7(8) = 29$

$9a = -27$

$a = -3$

$c = 8$

$(-3, 8)$

3. In a piggy bank there are some nickels and quarters. There are a total of 40 coins that add up to $5.80. Write and solve a system of equations to find the number of each type of coin in the piggy bank.

n = how many Nickles

Q = how Many Quarters

$10(.05n + .25Q = 5.80)$

$.5n + 2.5Q = 58$

$.5(N + Q = 40)$

$.5N + .5Q = 20$

$Q = 19$

$N = 21$

$\frac{2Q}{2} = \frac{38}{2}$

$Q = \$4.75$

$N = \$1.05$