① $N = 3D$

$.05N + .10D = 1.50$

$.05(3D) + .10D = 1.50$

$.15D + .10D = 1.50$

$\frac{.25D}{.25} = \frac{1.50}{.25}$

$D = 6$

$N = 3(6) = 18$

1. x = larger

y = smaller

$x + y = 21$

$3x = 4y$

$x = 21 - y$

$3(21 - y) = 4y$

$63 - 3y = 4y$

$+3y \quad +3y$

$\frac{63}{7} = \frac{7y}{7}$

$9 = y$

$x + 9 = 21$

$-9 \quad -9$

$x = 12$

Quiz Review 6.1 to 6.4 Name: _____

Algebra 1 Period: _____ Date: _____

Complete problems 1 and 2 using Desmos:

1. Solve the following systems of equations:

a) $2x+5y=12$
$5y=4x+6$ (1,2)

b) $-3x-4y=-7$
$9x+12y=11$ No Solution

2. What is the difference of the x & y values in the solution to the system:

$5x+4y=32$
$9x-y=33$ (4,3) $4-3=1$

3. Solve the following systems of equations using *substitution*:

a) $x=y+3$
$2x-y=5$
$x=-1+3$ $x=2$
$2(y+3)-y=5$
$2y+6-y=5$
$y+6=5$
$-6\ -6$
$y=-1$
$(2,-1)$

b) $6x+y=4$ $y=4-6x$
$-6x\ \ -6x$
$x-4y=19$ $y=4-6(1.4)$
$x-4(4-6x)=19$ $y=4-8.4$
$x-16+24x=19$ $y=-4.4$
$25x-16=19$
$+16\ +16$
$\frac{25x}{25}=\frac{35}{25}$
$x=\frac{35}{25}=\frac{7}{5}=1.4$
$(1.4,-4.4)$

c) $15x-3y=12$ $y=5x-3$
$15x-3(5x-3)=12$
$15x-15x+9=12$
$9=12$
False
No Solution

4. Solve the following systems of equations using *elimination*:

a) $4x+y=17$
$7y=4x-9$
$-4x\ \ -4x$
$4x+y=17$
$-4x+7y=-9$
$8y=8$
$\frac{8y}{8}=\frac{8}{8}$
$y=1$
$4x+1=17$
$-1\ \ -1$
$4x=16$
$\frac{4x}{4}=\frac{16}{4}$
$x=4$
$(4,1)$

b) $6x-5y=9$ (3)
$9x-7y=15$ (-2)
$18x-15y=27$
$-18x+14y=-30$
$-1y=-3$
$\frac{-1y}{-1}=\frac{-3}{-1}$
$y=3$
$6x-5(3)=9$
$6x-15=9$
$+15\ +15$
$6x=24$
$\frac{6x}{6}=\frac{24}{6}$
$x=4$
$(4,3)$

5. For what value of *k* will the given system have infinitely many solutions?

$$kx - 2y = 14$$
$$-9x + 6y = -42$$

(-3) (-3) x-3

Same equation.

$\frac{k(-3)}{-3} = \frac{-9}{-3}$

$k = 3$

6. An artist wants to sell prints of her paintings. She sees that an order with 45 regular photos and 30 glossy photos costs $10.20, and an order with 15 regular photos and 12 glossy photos costs $3.78.

a) Write a system of equations to describe this situation.

$45R + 30G = 10.20$

$(-3)\ 15R + 12G = 3.78\ (-3)$

b) How much does it cost for each regular photo and each glossy photo?

$45R + 30G = 10.20$
$-45R - 36G = -11.34$
$-6G = -1.14$
$\frac{-6G}{-6} = \frac{-1.14}{-6}$
$G = .19$

Glossy = 19¢
Regular = 10¢

$45R + 30(.19) = 10.20$
$45R + 5.70 = 10.20$
$-5.70 \quad -5.70$
$\frac{45R}{45} = \frac{4.5}{45}$
$R = .10$

c) How much would 32 regular photos and 12 glossy photos cost?

$32(.10) + 12(.19)$
$3.20 + 2.28 = \$5.48$

7. Jacelyn has 75 coins in her piggy bank. All are quarters and nickels. Their total value is $16.15.

a) Write a system of equations to describe this situation.

(-.25) $Q + N = 75\ (-.25)$
$.25Q + .05N = 16.15$

$Q = 75 - N$
$Q = 75 - 13$
$Q = 62$

b) How many of each type of coin does she have?

$-.25Q - .25N = -18.75$
$.25Q + .05N = 16.15$
$-.20N = -2.60$
$\frac{-.20N}{-.20} = \frac{-2.60}{-.20}$
$N = 13$

Nickels = 13
Quarter = 62