Chapter 7 Test Review Packet

Name: KEY

Solve the linear system by GRAPHING. Check your solution.

1.) $3x + 6y = 15$

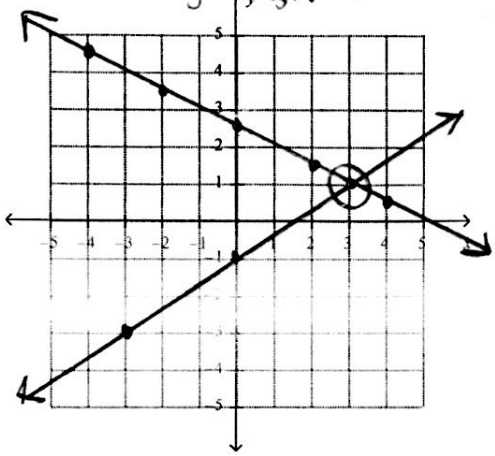
$6y = -3x + 15$

$y = -\frac{1}{2}x + 2.5$

$-2x + 3y = -3$

$3y = 2x - 3$

$y = \frac{2}{3}x - 1$



1.) (3, 1)

Check:

$3(3) + 6(1) \stackrel{?}{=} 15$

$9 + 6 \stackrel{?}{=} 15$

$15 = 15$ ✓

$-2(3) + 3(1) \stackrel{?}{=} -3$

$-6 + 3 \stackrel{?}{=} -3$

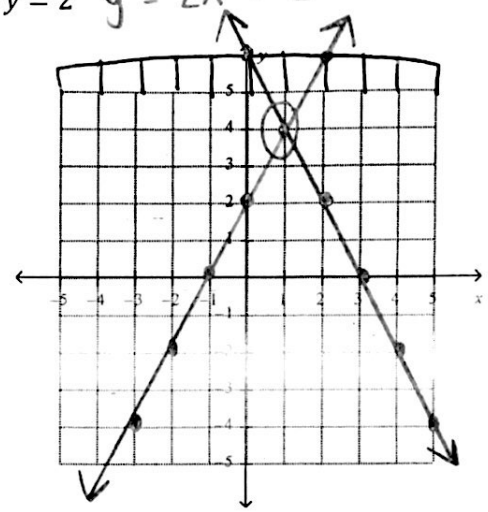
$-3 = -3$ ✓

2.) $2x + y = 6$

$y = -2x + 6$

$-2x + y = 2$

$y = 2x + 2$



2.) (1, 4)

Check:

$2(1) + (4) \stackrel{?}{=} 6$

$2 + 4 \stackrel{?}{=} 6$

$6 = 6$ ✓

$-2(1) + (4) \stackrel{?}{=} 2$

$-2 + 4 \stackrel{?}{=} 2$

$2 = 2$ ✓

In #3 and #4, solve the linear system using SUBSTITUTION. Check your solution.

3.) $3x + 2y = 31$

$x = y + 7$

$3(y + 7) + 2y = 31$

$3y + 21 + 2y = 31$

$5y + 21 = 31$

$5y = 10$

$\boxed{y = 2}$

$x = y + 7$

$x = 2 + 7$

$\boxed{x = 9}$

3.) (9, 2)

Check:

$3(9) + 2(2) \stackrel{?}{=} 31$

$27 + 4 \stackrel{?}{=} 31$

$31 = 31$ ✓

$9 \stackrel{?}{=} (2) + 7$

$9 = 9$ ✓

In #3 and #4, solve the linear system using SUBSTITUTION. Check your solution.

4.) $2x - y = -2$

$8x + 2y = 10$

$2x - y = -2$

$-y = -2x - 2$

$y = 2x + 2$

$8x + 2(2x+2) = 10$

$8x + 4x + 4 = 10$

$12x + 4 = 10$

$12x = 6$

$x = \frac{1}{2}$

$y = 2(\frac{1}{2}) + 2$

$y = 1 + 2$

$y = 3$

4.) $(\frac{1}{2}, 3)$

Check:

$2(\frac{1}{2}) - (3) \stackrel{?}{=} -2$

$1 - 3 \stackrel{?}{=} -2$

$-2 = -2$ ✓

$8(\frac{1}{2}) + 2(3) \stackrel{?}{=} 10$

$4 + 6 \stackrel{?}{=} 10$

$10 = 10$ ✓

In #5 and #6, solve the linear system using ELIMINATION. Check your solution.

5.) $x + 3y = 3$

$3x + 18y = 9$

$-3(x + 3y = 3)$

$-3x - 9y = -9$

$3x + 18y = 9$

$9y = 0$

$y = 0$

$x + 3(0) = 3$

$x = 3$

5.) $(3, 0)$

Check:

$(3) + 3(0) \stackrel{?}{=} 3$

$3 + 0 \stackrel{?}{=} 3$

$3 = 3$ ✓

$3(3) + 18(0) \stackrel{?}{=} 9$

$9 + 0 \stackrel{?}{=} 9$

$9 = 9$ ✓

6.) $5x + 4y = 9$

$4x + 5y = 9$

$-4(5x + 4y = 9)$

$5(4x + 5y = 9)$

$-20x - 16y = -36$

$20x + 25y = 45$

$9y = 9$

$y = 1$

$5x + 4(1) = 9$

$5x + 4 = 9$

$5x = 5$

$x = 1$

6.) $(1, 1)$

Check:

$5(1) + 4(1) \stackrel{?}{=} 9$

$5 + 4 \stackrel{?}{=} 9$

$9 = 9$ ✓

$4(1) + 5(1) \stackrel{?}{=} 9$

$4 + 5 \stackrel{?}{=} 9$

$9 = 9$ ✓

In #7, write two equations and <u>SOLVE</u>.

7.) You sold adult tickets for $25 and children tickets for $20 for your upcoming concert. Today, you sold a total of 41 tickets and collected $905 total for the ticket sales. Find the number of adult tickets and children tickets sold.

Variables: A = # of adult tickets C = # of children tickets

Equation #1: $A + C = 41$

Equation #2: $25A + 20C = 905$

$-25(A + C = 41)$

$-25A - 25C = -1025$

$+ \quad 25A + 20C = 905$

$-5C = -120$

$\boxed{C = 24}$

$A + 24 = 41$

$\boxed{A = 17}$

7.) 24 children tickets

17 adult tickets

In #8, write two equations but <u>DO NOT SOLVE</u>.

8.) Mr. Haasser and Ms. Hentrich go to Buffalo Wild Wings for lunch. Mr. Haasser hammers down 4 spicy wings and 5 garlic wings and spends $19.91. Ms. Hentrich orders 3 spicy wings and 1 garlic wing and spends a whopping $9.46. How much does each spicy wing and garlic wing cost?

Variables: S = cost of spicy wings G = cost of garlic wings

Equation #1: $4S + 5G = 19.91$

Equation #2: $3S + 1G = 9.46$