Name _____ Date _____

Math 8R Period _____

Review for Systems Quiz

Directions: Solve the following systems of equations **algebraically** for solve for x and y and CHECK!

1) $y = -x + 5$

$y = 2x - 4$

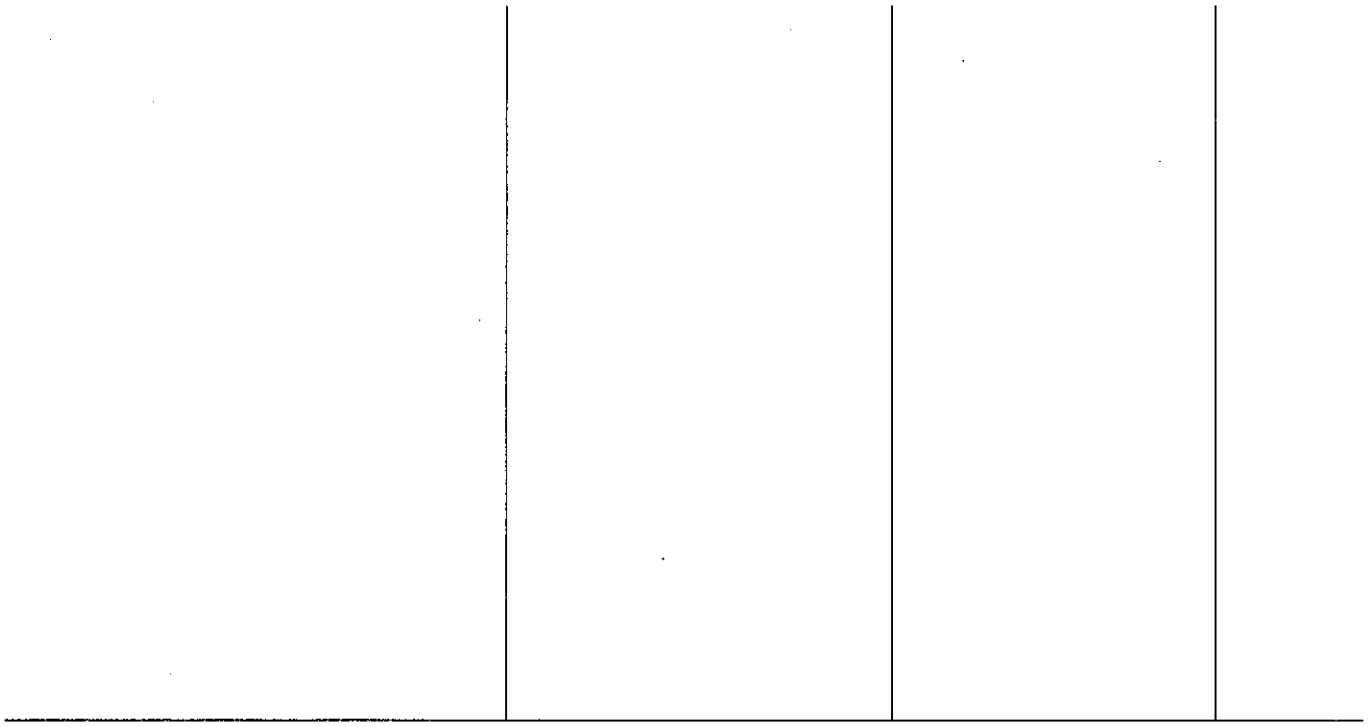
2) $y = 2x + 1$

$y = 5x - 2$

Directions: Solve for x and y using the **substitution method** and CHECK!

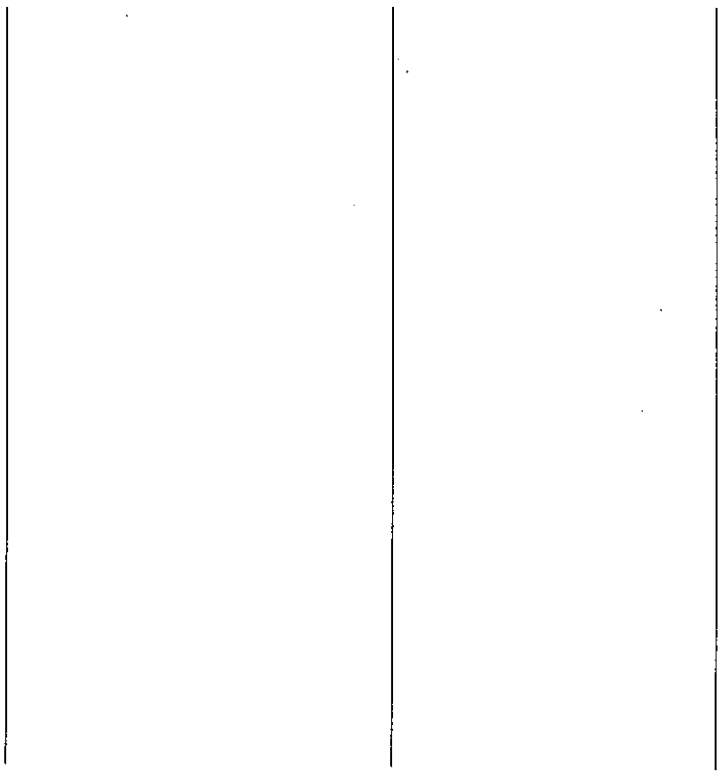
3) $y = 2x + 1$

$x + 2y = 7$



4) $y = x - 6$

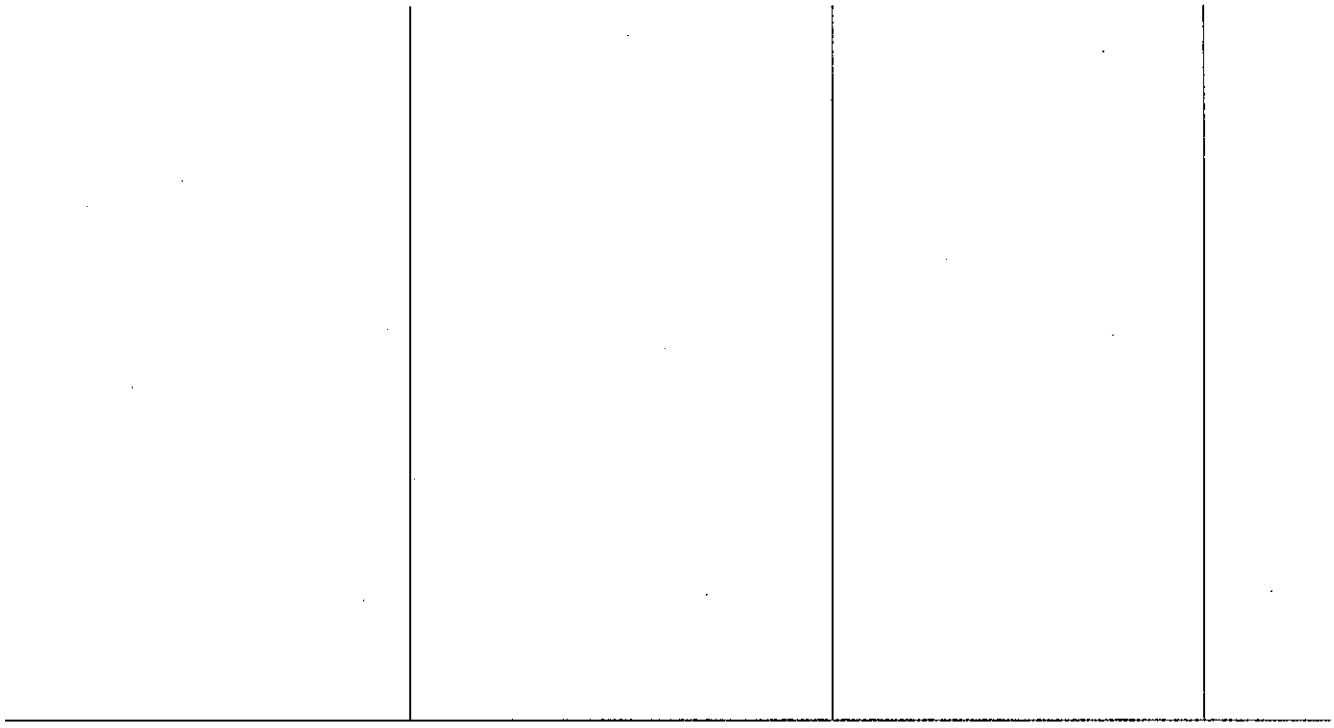
$3x + y = 10$



Directions: Solve for x and y using the **elimination method** and CHECK!

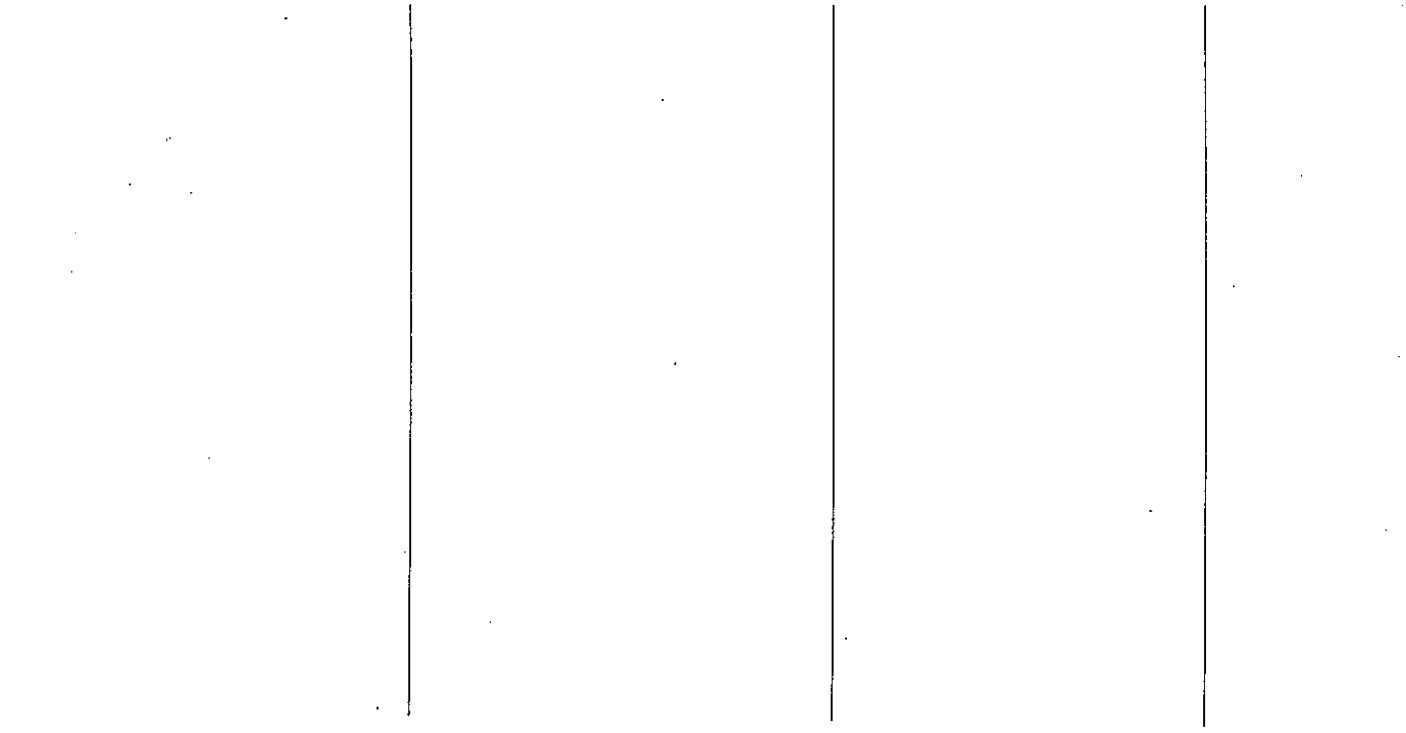
5) $15x + 20y = 45$

$-15x - 18y = -63$



6) $5x - 2y = 20$

$2x + 3y = 27$



Name Key

Math 8R

Date _____

Period _____

Review for Systems Quiz

Directions: Solve the following systems of equations **algebraically** for solve for x and y and CHECK!

* when both equations are = to y, set the expressions equal to each other.

1) $y = -x + 5$
$y = 2x - 4$

$-x + 5 = 2x - 4$
$+x \quad +x$
$5 = 3x - 4$
$+4 \quad +4$
$9 = 3x$
$\frac{9}{3} = \frac{3x}{3}$
$x = 3$

$y = -x + 5$
$y = -(3) + 5$
$y = -3 + 5$
$y = 2$

$(3, 2)$
$x \; y$

Check #1 $(3,2)$
$y = -x + 5$
$2 = -(3) + 5$
$2 = -3 + 5$
$2 = 2$ ✓

Check #2 $(3,2)$
$y = 2x - 4$
$2 = 2(3) - 4$
$2 = 6 - 4$
$2 = 2$ ✓

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2) $y = 2x + 1$
$y = 5x - 2$

$2x + 1 = 5x - 2$
$-2x \quad -2x$
$1 = 3x - 2$
$+2 \quad +2$
$3 = 3x$
$\frac{3}{3} = \frac{3x}{3}$
$x = 1$

$y = 2x + 1$
$y = 2(1) + 1$
$y = 2 + 1$
$y = 3$

$(1, 3)$
$x \; y$

Check #1 $(1,3)$
$y = 2x + 1$
$3 = 2(1) + 1$
$3 = 2 + 1$
$3 = 3$ ✓

Check #2 $(1,3)$
$y = 5x - 2$
$3 = 5(1) - 2$
$3 = 5 - 2$
$3 = 3$ ✓

Directions: Solve for x and y using the **substitution method** and CHECK!

3) $y = (2x+1)$
$x + 2y = 7$

* when only 1 equation is = to y, write the equation with the x and y on the same side 1st + plug into that equation.

$x + 2(y) = 7$
$x + 2(2x+1) = 7$
$x + 4x + 2 = 7$
$5x + 2 = 7$
$-2 \quad -2$
$\frac{5x}{5} = \frac{5}{5}$
$x = 1$

$y = 2x + 1$
$y = 2(1) + 1$
$y = 2 + 1$
$y = 3$

$(1, 3)$
x y

Check #1
$y = 2x + 1$ (1, 3)
$3 = 2(1) + 1$
$3 = 2 + 1$
$3 = 3$ ✓

Check #2
$x + 2y = 7$ (1, 3)
$1 + 2(3) = 7$
$1 + 6 = 7$
$7 = 7$ ✓

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4) $y = (x-6)$
$3x + y = 10$

$3x + (y) = 10$
$3x + 1(x-6) = 10$
$3x + x - 6 = 10$
$4x - 6 = 10$
$+6 \quad +6$
$\frac{4x}{4} = \frac{16}{4}$
$x = 4$

$y = x - 6$
$y = 4 - 6$
$y = -2$

$(4, -2)$
x y

Check #1
$y = x - 6$ (4, -2)
$-2 = 4 - 6$
$-2 = -2$ ✓

Check #2
$3x + y = 10$ (4, -2)
$3(4) + (-2) = 10$
$12 - 2 = 10$
$10 = 10$ ✓

Directions: Solve for x and y using the **elimination method** and CHECK!

★ must have additive inverses to add the equations together

5) $15x + 20y = 45$
$+\ -15x - 18y = -63$

$\frac{2y}{2} = \frac{-18}{2}$

$y = -9$

$15x + 20y = 45$
$15x + 20(-9) = 45$
$15x - 180 = 45$
$+180 \quad +180$
$\frac{15x}{15} = \frac{225}{15}$

$x = 15$

$(15, -9)$
x y

Check #1 (15, -9)
$15x + 20y = 45$
$15(15) + 20(-9) = 45$
$225 - 180 = 45$
$45 = 45$ ✓

Check #2 (15, -9)
$-15x - 18y = -63$
$-15(15) - 18(-9) = -63$
$-225 + 162 = -63$
$-63 = -63$ ✓

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6) $2(5x - 2y = 20) \rightarrow 10x - 4y = 40$
$-5(2x + 3y = 27) \rightarrow -10x - 15y = -135$

$10x - 4y = 40$
$+\ -10x - 15y = -135$

$\frac{-19y}{-19} = \frac{-95}{-19}$

$y = 5$

$5x - 2y = 20$ ← original
$5x - 2(5) = 20$
$5x - 10 = 20$
$+10 \quad +10$
$\frac{5x}{5} = \frac{30}{5}$

$x = 6$

$(6, 5)$
x y

Check #1 original ↓ (6, 5)
$5x - 2y = 20$
$5(6) - 2(5) = 20$
$30 - 10 = 20$
$20 = 20$ ✓

Check #2 original ↓ (6, 5)
$2x + 3y = 27$
$2(6) + 3(5) = 27$
$12 + 15 = 27$
$27 = 27$ ✓