Algebra 1 Name_____

Unit 2 Semester Review

Date_____ Period____

LINEAR EQUATIONS: Solve or graph

1) $1 - 2a = 6 + 2a + 7 - 4$

A) $\{8\}$
B) $\{1\}$
C) $\{-2\}$
D) { All real numbers. }

2) $-2(2a + 5) = -28 - 7a$

A) $\{12\}$ B) $\{8\}$
C) $\{-6\}$ D) $\{3\}$

3) $6(5a - 5) - 8 = 2(4a - 8)$

A) $\{-8\}$ B) $\{-14\}$
C) No solution. D) $\{1\}$

LITERAL EQUATIONS: Solve each equation for the indicated variable.

4) $g = ca$, for a

A) $a = \frac{c}{g}$ B) $a = g - c$
C) $a = \frac{g}{c}$ D) $a = -g - c$

5) $g = c - x$, for x

A) $x = g + c$ B) $x = \frac{c}{g}$
C) $x = -g + c$ D) $x = -\frac{g}{c}$

6) $u = xk - y$, for x

A) $x = \frac{k}{-u - y}$ B) $x = \frac{u - y}{k}$
C) $x = ku + ky$ D) $x = \frac{u + y}{k}$

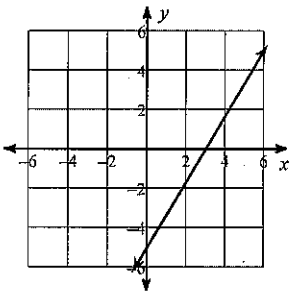
7) $k + x = v + w$, for x

A) $x = -k + v + w$
B) $x = k + v - w$
C) $x = k + w + v$
D) $x = -v - k + w$

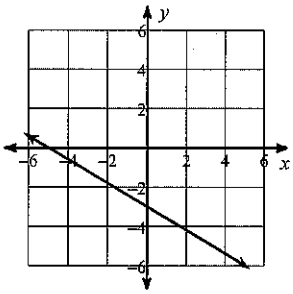
GRAPHING LINEAR EQUATIONS: Sketch the graph of each line.

8) x-intercept = –5, y-intercept = 3

A)



B)



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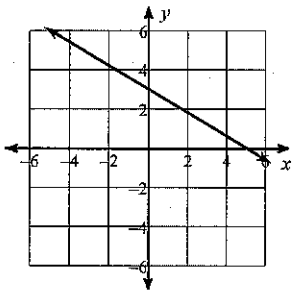

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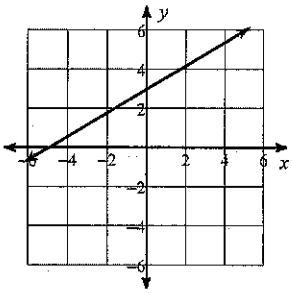
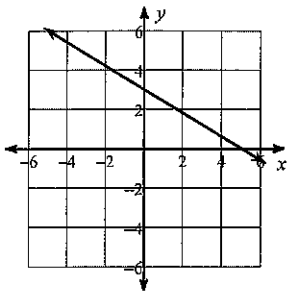


9) $3x - 5y = 15$

A)



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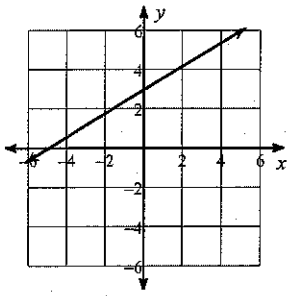

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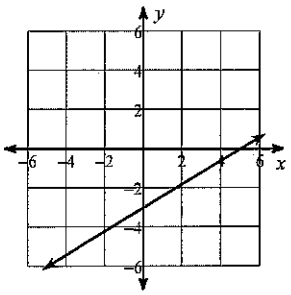
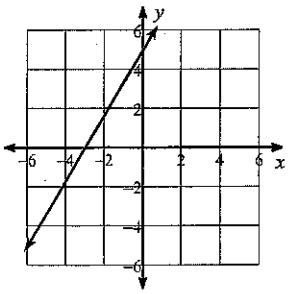
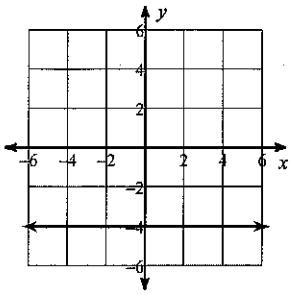


D)

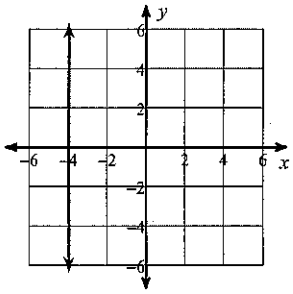


10) $y = 4$

A)



B)



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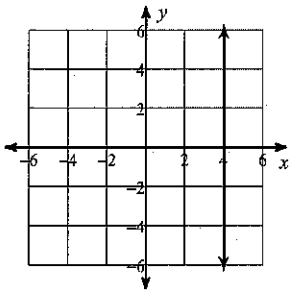
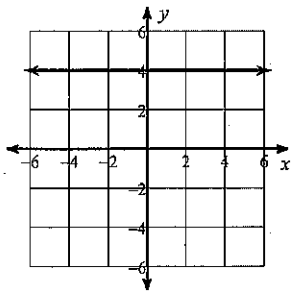
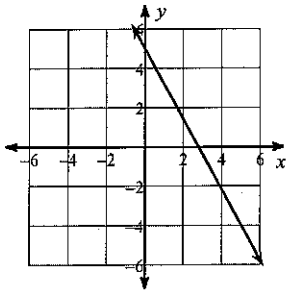


D)

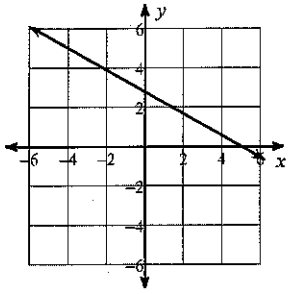


11) $5y = -9x + 25$

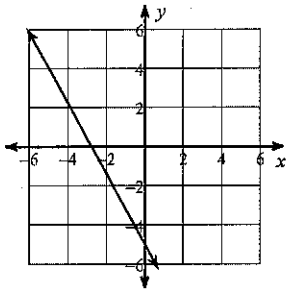
A)



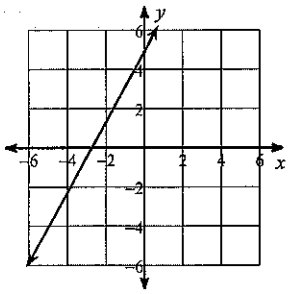
B)



C)



D)



SOLVING SYSTEM OF EQUATIONS: Solve each system by using either substitution or elimination.

12) $-x = -12 - 3y$
$-12 + x = 3y$

A) $(2, 2)$
B) $(2, 5)$
C) $(-2, -2)$
D) Infinite number of solutions

13) $-24 = 8y - 2x$
$-8 + x = 4y$

A) No solution
B) $(3, -2)$
C) $(-2, -2)$
D) $(-3, -2)$

14) $0 = 4 + 2y - 3x$
$\frac{1}{12}x = -1 + \frac{1}{3}y$

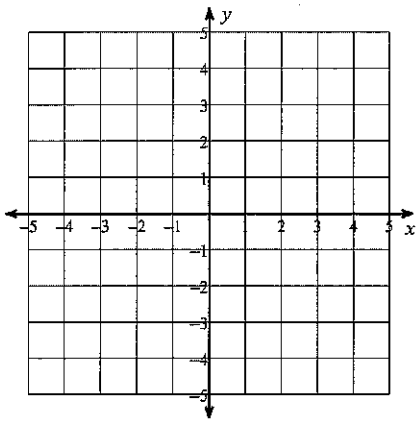
A) $(-4, -5)$ B) No solution
C) $(4, 4)$ D) $(4, -4)$

15) $-y - 3 = \frac{1}{4}x$
$4y = -7x + 12$

A) $(4, 4)$ B) $(4, -4)$
C) $(-4, 4)$ D) $(-4, -4)$

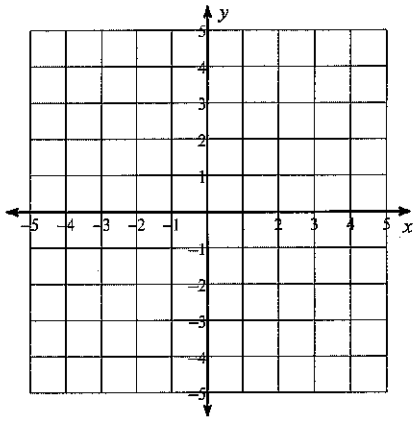
GRAPHING SYSTEM OF EQUATIONS: Solve each system by graphing.

16) $x - y = -1$
$2y + 3x = -8$



A) $(2, -1)$ B) $(-2, -1)$
C) $(2, 1)$ D) $(-1, 2)$

17) $-x - 3 = y$
$y = 2 - 6x$



A) $(-5, -4)$ B) $(-4, 1)$
C) $(-4, -5)$ D) $(1, -4)$

WORD PROBLEMS: Solve the system of equations.

18) At the Burger Barn, 4 burgers and 3 fries cost \$26.50. 8 burgers and 5 fries costs \$50.50. What is the cost for burgers?

A) \$3.75 B) \$4.25
C) \$2.50 D) \$4.75

19) The Pope HS Drama Club sold tickets to their last performance and made \$1,190. Each adult ticket is \$7 and each student ticket is \$5.00. If 190 people attended, how many adults were there?

A) 70 B) 120
C) 50 D) 140

INEQUALITIES: Solve each inequality.

20) $-6 < -7 + \frac{k}{9}$

A) $k > 9$ B) $k > -33$
C) $k < 9$ D) $k < -33$

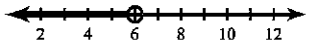
21) $4 \le \frac{p+9}{5}$

A) $p \ge 7$ B) $p \ge -20$
C) $p \ge 11$ D) $p \ge -35$

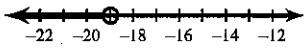
Solve each inequality and graph its solution.

22) $\frac{n-7}{26} > -1$

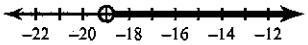
A) $n < 6$:



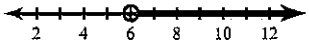
B) $n < -19$:



C) $n > -19$:

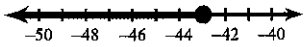


D) $n > 6$:

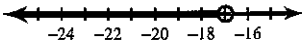


23) $47 > -3x - 4$

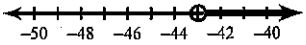
A) $x > -43$:



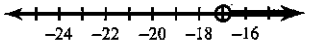
B) $x < -17$:



C) $x > -43$:

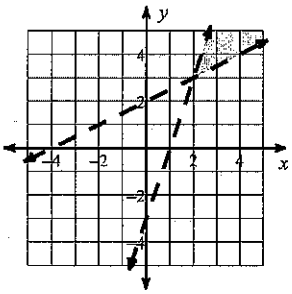


D) $x > -17$:



24) $x + 3y < 3$
$4x + 3y \geq -6$

A)



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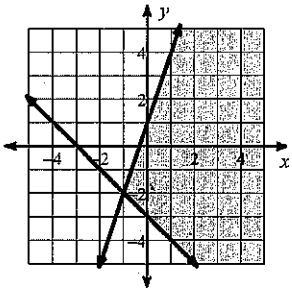
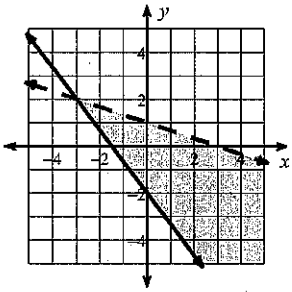


C)



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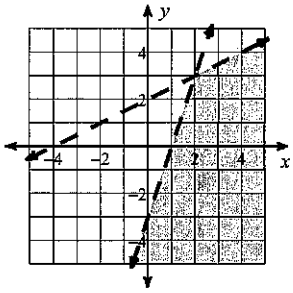
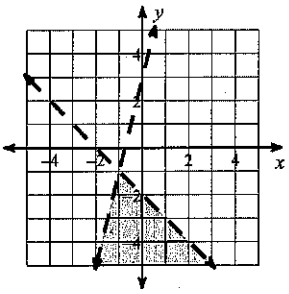
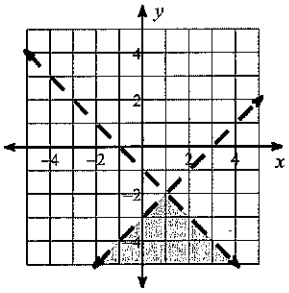


25) $x + y < -1$
$x - y > 3$

A)



B)



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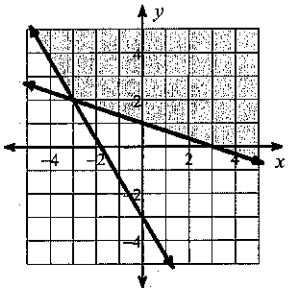

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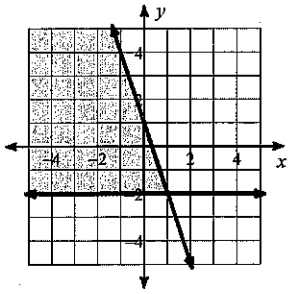
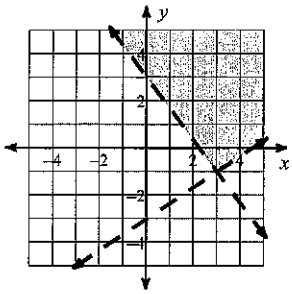


26) $4x + 3y > 9$
$2x - 3y < 9$

A)



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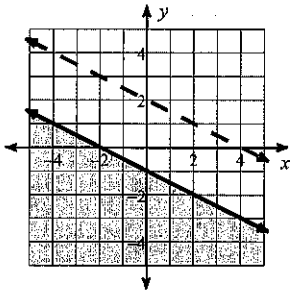
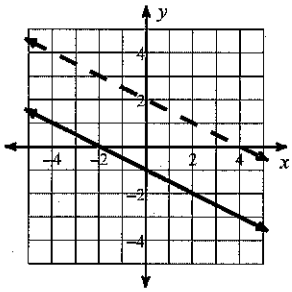
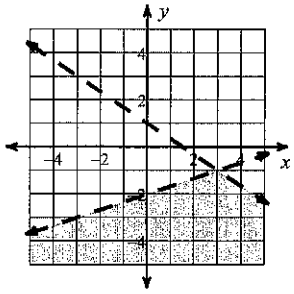


C)

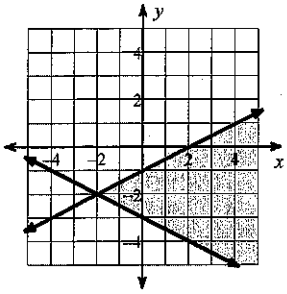


D)

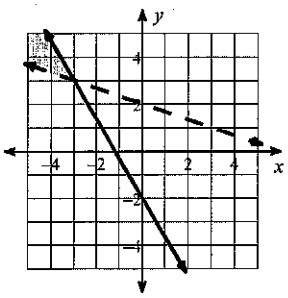


27) $y \le -\frac{5}{3}x - 2$
$y > -\frac{1}{3}x + 2$

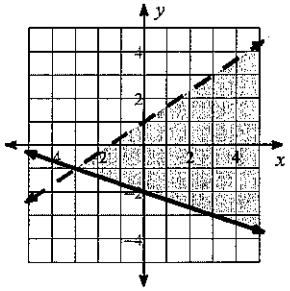
A)



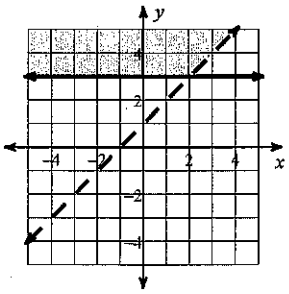
B)



C)



D)



CONSECUTIVE INTEGER WORD PROBLEMS

28) The sum of 5 consecutive integers is -40. Find the middle integer.

A) -7 B) -10
C) -5 D) -8

29) The sum of 3 consecutive even integers is 336. Find the largest integer.

A) 114 B) 98
C) 100 D) 106

FUNCTIONS AND RELATIONS

30) A vertical line represents a....

A) quadratic B) polynomial
C) function D) relation

31) What does the following set of numbers represent:
x={2, 3, 4, 5, 6, 2} y = {1, 2, 3}

A) quadratic B) function
C) polynomial D) relation

32) What does the following set of numbers represent:
x={2} y={3, 4, 5}

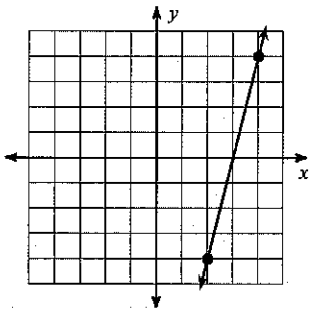
A) relation B) function
C) quadratic D) polynomial

33) What will this represent:
(2, 3) (4, 1) (5, 4) (6, 7)

A) relation B) quadratic
C) function D) polynomial

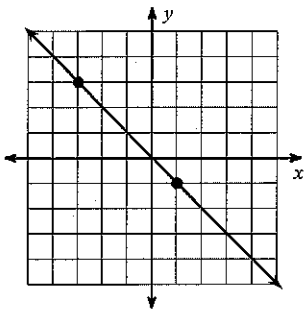
RATE OF CHANGE: Find the ROC using the two different points.

34)



A) $-\frac{1}{4}$ B) $\frac{1}{4}$
C) 4 D) -4

35)



A) 1 B) $-\frac{1}{5}$
C) -1 D) $\frac{1}{5}$

36) Find the rate of change of f(x) = -2x +7 over the interval 4, 6].

37) Find the rate of change of f(x) = 6x +10 over the interval -2, 5].

FUNCTION NOTATION AND SOLVING: f(x) = 5x - 12 g(x) = -x + 2 h(x) = -3x + 1

38) f(8) = ?

A) 28 B) 40
C) 32 D) 52

39) h(-3) = ?

A) -9 B) 10
C) 11 D) 12

40) g(11) = ?

A) -8 B) 9
C) -9 D) 13

41) g(2) + h(1) = ?

A) 4 B) -4
C) 0 D) -2

42) g(x) = 20, what is x?

A) -18 B) 12
C) -22 D) 20

43) f(x) = 3, what is x?

A) -15 B) 15
C) 3 D) -3

44) h(x) = 1, what is x?

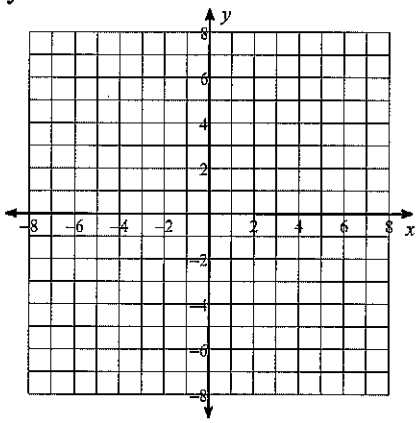
A) -3 B) 3
C) 2 D) 0

45) g(x) = -12, what is x?

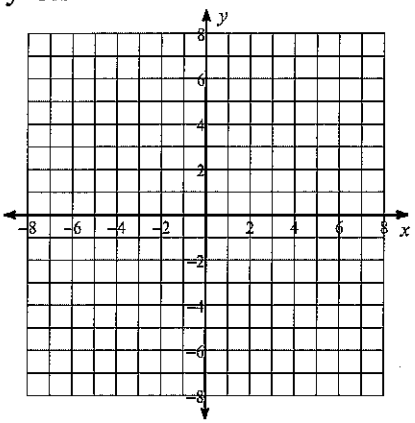
A) 12 B) -12
C) -14 D) 14

INTERVALS AND END BEHAVIOR: Write in your answer on the answer document. This is not a multiple choice question. Graphing them helps to answer them.

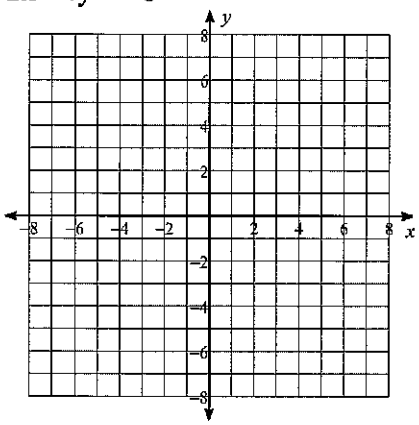
46) Graph the following equation and name the increasing interval.
y=2x-7



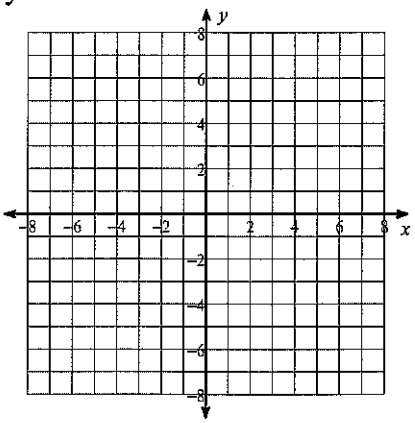
47) Graph the following equation and name the decreasing interval.
y=3x+1



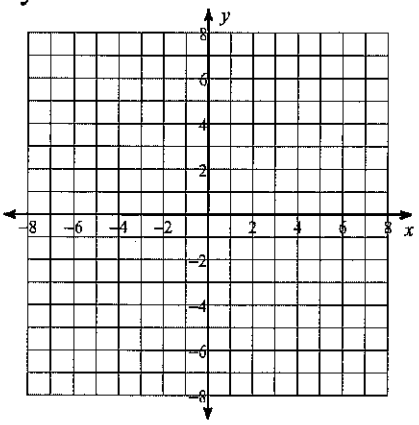
48) Graph the following equation and name both end behaviors.
2x - 4y = - 8



49) Graph the following equation and find the x and y intercepts.
y - x = 2



50) Graph the following equation and name the domain and range.
3y = 6x - 9



Answers to Unit 2 Semester Review

1) C	2) C	3) D	4) C
5) C	6) D	7) A	8) D
9) C	10) D	11) A	12) D
13) A	14) C	15) B	16) B
17) D	18) D	19) B	20) A
21) C	22) C	23) D	24) C
25) B	26) A	27) B	28) D
29) A	30) D	31) D	32) A
33) C	34) C	35) C	36) -2
37) 6	38) A	39) B	40) C
41) D	42) A	43) C	44) D
45) D	46)	47)	48)
49)	50)		

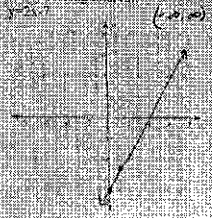
KEY

INTERVALS AND END BEHAVIOR. Write in your answer on the answer document. This is not a multiple choice question. Graphing them helps to answer them.

46) Graph the following equation and name the increasing interval.

$y = 2x - 7$

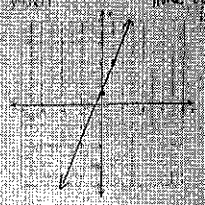
(-∞, ∞)



47) Graph the following equation and name the decreasing interval.

$y = |x|$

none, it's never lower is going up



48) Graph the following equation and name the end behaviors.

$2x - 4y = 8$

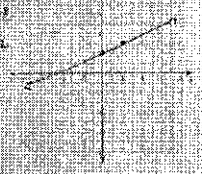
$x \to -\infty = \underline{-\infty}$

$x \to \infty = \underline{\infty}$

$2x - 4y = 8$

$-4y = -2x + 8$

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



49) Graph the following equation and find the x and y intercepts.

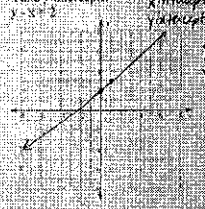
$y - x = 2$

x intercept = $\underline{(-2, 0)}$

y intercept = $\underline{(0, 2)}$

$y - x = 2$

$y = x + 2$



50) Graph the following equation and name the domain and range. D: $\underline{(-\infty, \infty)}$ R: $\underline{(-\infty, \infty)}$

$3y - 6x = 9$

$3y = 6x + 9$

$y = 2x + 3$