Math 3 Honors Name_____ ID: 1

Unit 2 Test 1 Review

Date_____ Period____

Solve each system by elimination.

1) $2x + 10y = 2$
$-10x + 5y = -10$

2) $5x + 2y = -10$
$2x + y = -5$

3) $-14x + 12y = 22$
$-7x + 6y = 14$

4) $-8x - 9y = -21$
$-4x - 18y = 30$

Solve each system by substitution.

5) $y = 6$
$2x + 2y = -2$

6) $-7x + y = -8$
$-5x - y = -16$

7) $-6x + 5y = -16$
$7x + y = 5$

8) $-8x - 7y = -4$
$y = -4$

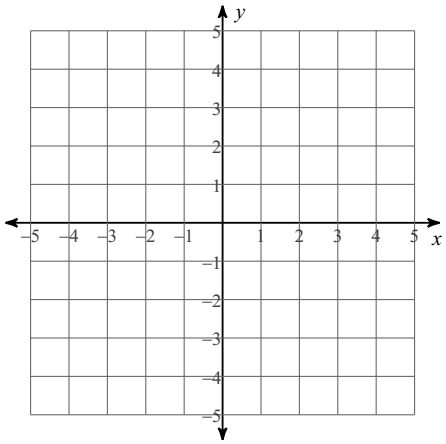
Solve each system by graphing.

9) $y = -\frac{5}{2}x + 2$
$y = -\frac{1}{2}x - 2$

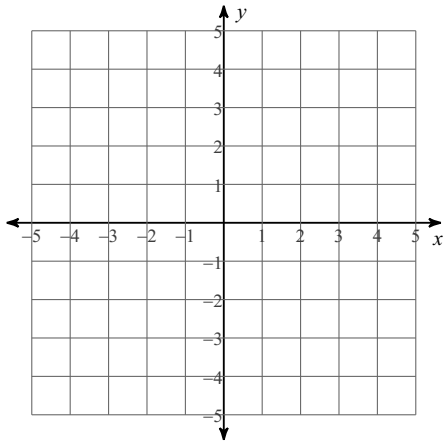
10) $y = -5x + 1$
$y = -x - 3$

Sketch the solution to each system of inequalities.

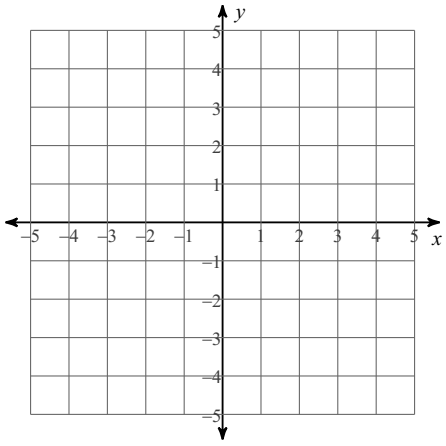
11) $y \le 2x + 3$
$y \le -3x - 2$



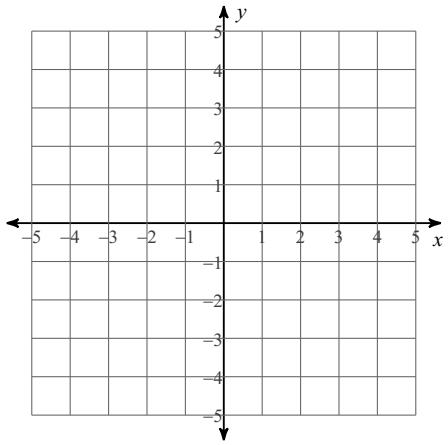
12) $x \le -3$
$y \ge -x - 1$



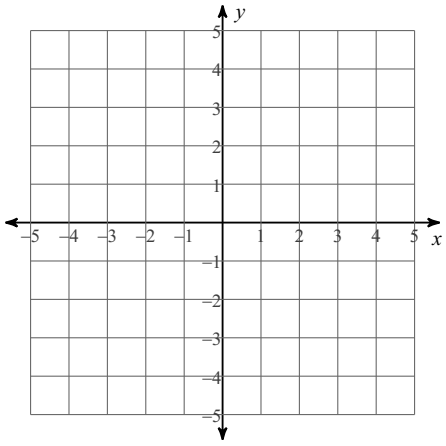
13) $y > -\frac{1}{3}x + 2$
$y \ge -\frac{4}{3}x - 1$



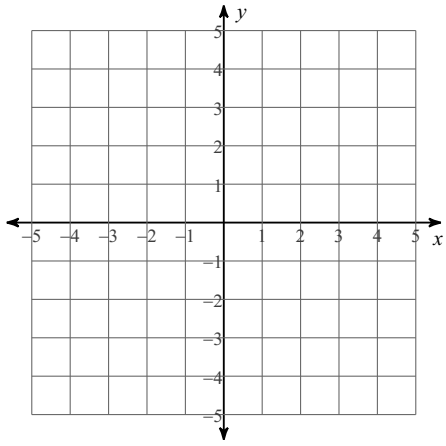
14) $y > -\frac{2}{3}x - 3$
$y \ge x + 2$



15) $y \geq 2x - 3$
$y \leq -3x + 2$



16) $y \leq 2x + 1$
$y \geq 3$



Determine if the sequence is arithmetic. If it is, find the common difference.

17) $-32,\ -40,\ -48,\ -56, \ldots$

18) $-1,\ 99,\ 199,\ 299, \ldots$

Given the explicit formula for an arithmetic sequence find the first five terms and the term named in the problem.

19) $a_n = -46 + 10n$
Find a_{30}

20) $a_n = -18 + 8n$
Find a_{26}

Given the first term and the common difference of an arithmetic sequence find the recursive formula and the three terms in the sequence after the last one given.

21) $a_1 = 2,\ d = 30$

22) $a_1 = 1,\ d = -5$

Given the explicit formula for an arithmetic sequence find the first five terms and the term named in the problem.

23) $a_n = 8 - 6n$
Find a_{31}

24) $a_n = 6 - 10n$
Find a_{35}

25) A boat traveled 120 miles downstream and back. The trip downstream took 3 hours. The trip back took 6 hours. Find the speed of the boat in still water and the speed of the current.

26) When you reverse the digits in a certain two-digit number you decrease its value by 18. What is the number if the sum of its digits is 16?

27) When you reverse the digits in a certain two-digit number you decrease its value by 27. Find the number if the sum of its digits is 7.

28) Jennifer and Arjun are selling wrapping paper for a school fundraiser. Customers can buy rolls of plain wrapping paper and rolls of shiny wrapping paper. Jennifer sold 14 rolls of plain wrapping paper and 10 rolls of shiny wrapping paper for a total of $116. Arjun sold 2 rolls of plain wrapping paper and 5 rolls of shiny wrapping paper for a total of $38. What is the cost each of one roll of plain wrapping paper and one roll of shiny wrapping paper?

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Unit 2 Test 1 Review

Date_____ Period____

Solve each system by elimination.

1) $2x + 10y = 2$
$-10x + 5y = -10$
$(1, 0)$

2) $5x + 2y = -10$
$2x + y = -5$
$(0, -5)$

3) $-14x + 12y = 22$
$-7x + 6y = 14$
No solution

4) $-8x - 9y = -21$
$-4x - 18y = 30$
$(6, -3)$

Solve each system by substitution.

5) $y = 6$
$2x + 2y = -2$
$(-7, 6)$

6) $-7x + y = -8$
$-5x - y = -16$
$(2, 6)$

7) $-6x + 5y = -16$
$7x + y = 5$
$(1, -2)$

8) $-8x - 7y = -4$
$y = -4$
$(4, -4)$

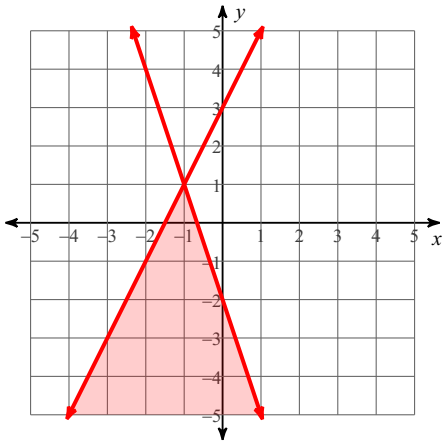
Solve each system by graphing.

9) $y = -\frac{5}{2}x + 2$
$y = -\frac{1}{2}x - 2$
$(2, -3)$

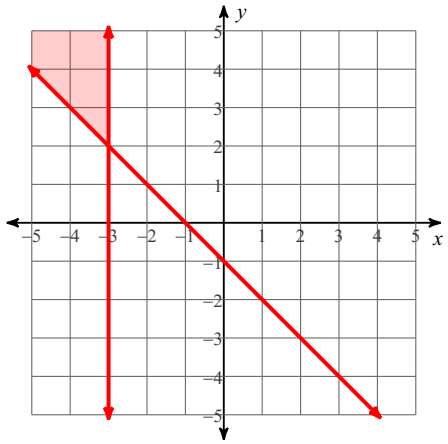
10) $y = -5x + 1$
$y = -x - 3$
$(1, -4)$

Sketch the solution to each system of inequalities.

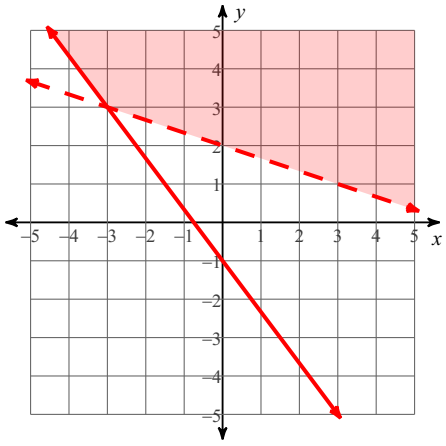
11) $y \le 2x + 3$
$y \le -3x - 2$



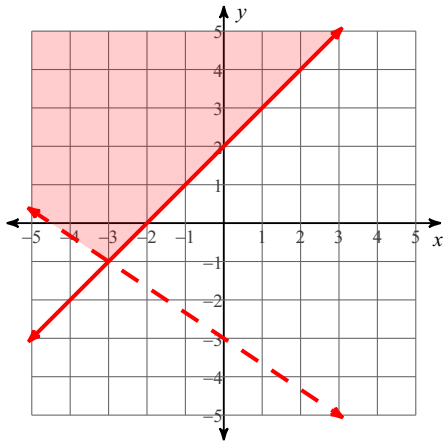
12) $x \le -3$
$y \ge -x - 1$



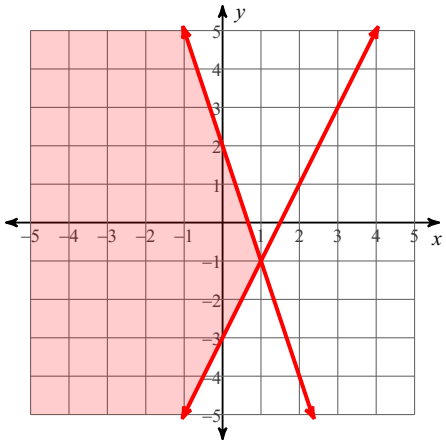
13) $y > -\frac{1}{3}x + 2$
$y \ge -\frac{4}{3}x - 1$



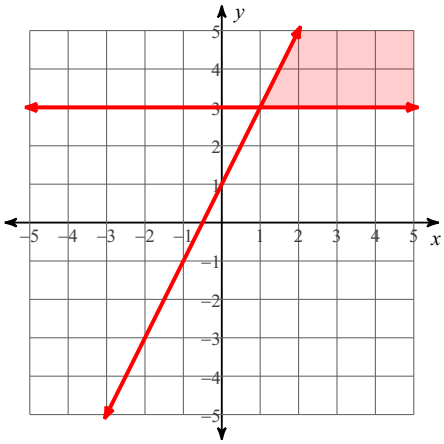
14) $y > -\frac{2}{3}x - 3$
$y \ge x + 2$



15) $y \geq 2x - 3$
$y \leq -3x + 2$



16) $y \leq 2x + 1$
$y \geq 3$



Determine if the sequence is arithmetic. If it is, find the common difference.

17) $-32,\ -40,\ -48,\ -56,\ ...$

$d = -8$

18) $-1,\ 99,\ 199,\ 299,\ ...$

$d = 100$

Given the explicit formula for an arithmetic sequence find the first five terms and the term named in the problem.

19) $a_n = -46 + 10n$
Find a_{30}

First Five Terms: $-36,\ -26,\ -16,\ -6,\ 4$
$a_{30} = 254$

20) $a_n = -18 + 8n$
Find a_{26}

First Five Terms: $-10,\ -2,\ 6,\ 14,\ 22$
$a_{26} = 190$

Given the first term and the common difference of an arithmetic sequence find the recursive formula and the three terms in the sequence after the last one given.

21) $a_1 = 2,\ d = 30$

Next 3 terms: $32,\ 62,\ 92$
Recursive: $a_n = a_{n-1} + 30$
$a_1 = 2$

22) $a_1 = 1,\ d = -5$

Next 3 terms: $-4,\ -9,\ -14$
Recursive: $a_n = a_{n-1} - 5$
$a_1 = 1$

Given the explicit formula for an arithmetic sequence find the first five terms and the term named in the problem.

23) $a_n = 8 - 6n$

Find a_{31}

First Five Terms: 2, –4, –10, –16, –22

$a_{31} = -178$

24) $a_n = 6 - 10n$

Find a_{35}

First Five Terms: –4, –14, –24, –34, –44

$a_{35} = -344$

25) A boat traveled 120 miles downstream and back. The trip downstream took 3 hours. The trip back took 6 hours. Find the speed of the boat in still water and the speed of the current.

boat: 30 mph, current: 10 mph

26) When you reverse the digits in a certain two-digit number you decrease its value by 18. What is the number if the sum of its digits is 16?

97

27) When you reverse the digits in a certain two-digit number you decrease its value by 27. Find the number if the sum of its digits is 7.

52

28) Jennifer and Arjun are selling wrapping paper for a school fundraiser. Customers can buy rolls of plain wrapping paper and rolls of shiny wrapping paper. Jennifer sold 14 rolls of plain wrapping paper and 10 rolls of shiny wrapping paper for a total of $116. Arjun sold 2 rolls of plain wrapping paper and 5 rolls of shiny wrapping paper for a total of $38. What is the cost each of one roll of plain wrapping paper and one roll of shiny wrapping paper?

roll of plain wrapping paper: $4, roll of shiny wrapping paper: $6