Name: _____ Date: _____

Unit 2 Test Review

1. Given the following chart, if we add the given points to it, will it remain a function? Say why or why not for each point.

x	-2	0	5	8	13
y	6	-4	9	12	-3

a) (3,9)

b) (8,7)

c) (13,−3)

2. Solve the given systems by the requested methods:

a) Elimination: $\begin{array}{l} 16x + 7y = 5 \\ 8x - 3y = -17 \end{array}$

b) Substitution: $\begin{array}{l} 3x - y = 10 \\ y = 4x - 11 \end{array}$

c) Graphing: $\begin{array}{l} x - 2y = 4 \\ 3x + 4y = -28 \end{array}$

d) Inequalities: $\begin{array}{l} 2x + y > 3 \\ x - y \le 7 \end{array}$
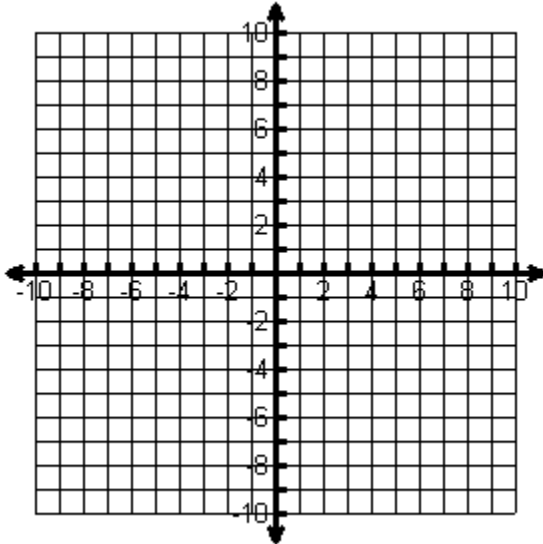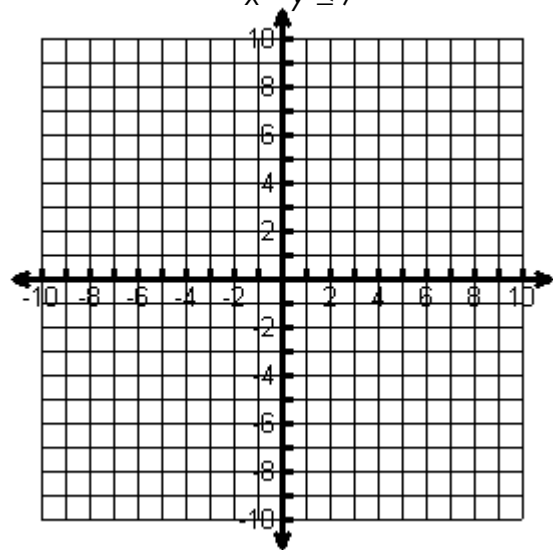
3. Is (5,9) a solution to $12 - 4x \geq 24$? Why or why not?

4. Zion is buying decorations for Homecoming. Balloons cost $7 a pack and streamers are $12 a pack. If the decorating budget has $250, write an **inequality** for the cost of balloon and streamers that they can buy

5. You are on a farm that raises cows and chickens. If there are 20 animals total, and the animals have 56 legs in total (assume a standard number of legs for the animals), how many cows and how many chickens are there?

6. Solve the following equations for the requested variables:

   a) $r = fh + c$; h b) $P = 2(L + W)$; L

7. Find a_n for the arithmetic sequence $7, 3, -1, ...$

8. $f(x) = \frac{2}{3}x - 4$

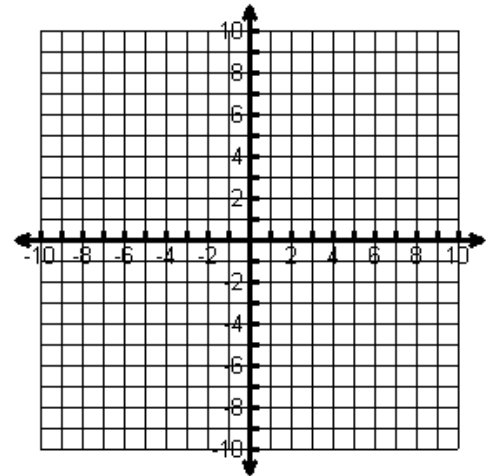a. Domain: _____   b. Range: _____

c. Increasing or decreasing?_____

d. x-intercept: _____   e. y-intercept: _____

$$x \rightarrow \underline{\quad} \quad f(x) \rightarrow \underline{\quad}$$

e. End Behavior:

$$x \rightarrow \underline{\quad} \quad f(x) \rightarrow \underline{\quad}$$

f. Rate of change from $[-3,6]$ _____

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9. What is the 10th term in an arithmetic sequence whose third term is 17 and whose common difference is 8?

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10. Convert the following sequences between explicit and recursive:

a) $a_n = 7n - 11$ b) $a_n = a_{n-1} - 4; a_1 = 6$

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11. Given the functions $f(x) = 3x^2 - 4x + 19$ and $g(x) = 6x + 35$

a) $g(8) =$ b) $f(-4) =$