## **Module 1** Review

**Solve the following equations for the unknown variable.**

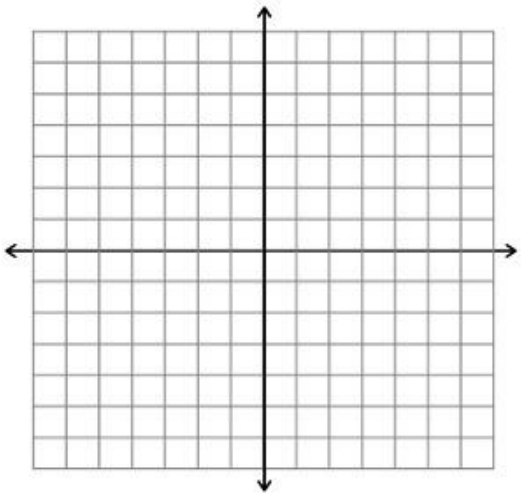
1. $3(2x + 1) = 2(x + 3) + 3x$

2. $2(2x + 3) + 5(x + 4) = 4(2x + 5) + 8$

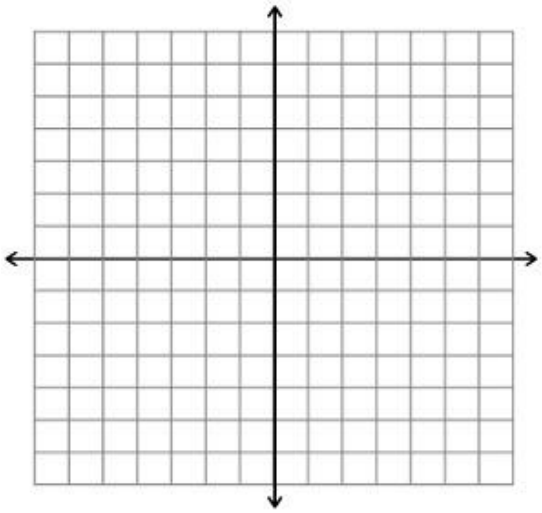
3. Review Elvira's Task with sticky notes. Module 1.3

**Write the equation of the line in slope intercept form. Then graph each line.**

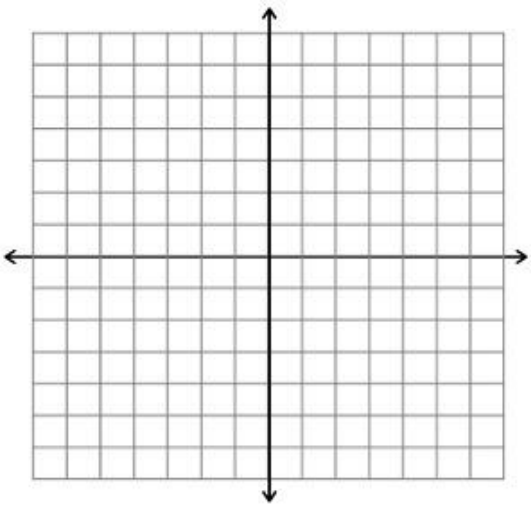
4. $3x + 5y = 15$



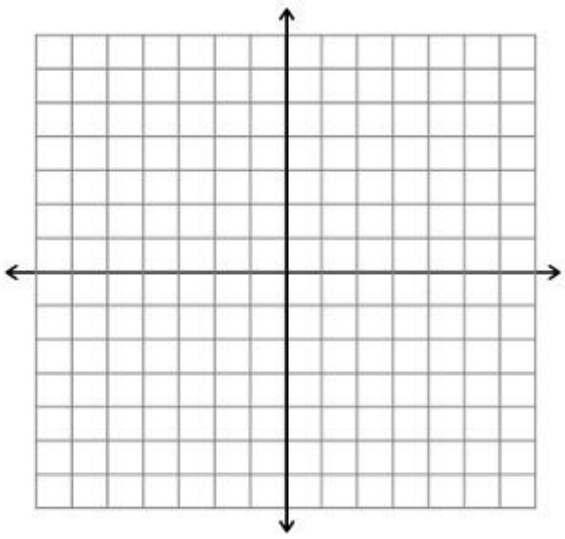
5. $7x - 3y = 21$



6. $8x + 7y = 56$

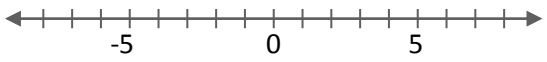


7. $-5x - 4y = 40$



**#8-11. Solve each inequality. Graph the solutions on the number line AND state 3 numbers in the solution set. Show all your work!**

8. $2x + 7 > 17$




3 numbers in the solution set:

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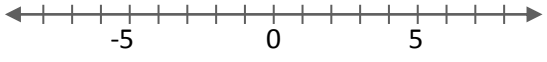
9. $20 > 6z + 2$




3 numbers in the solution set:

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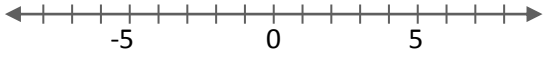
10. $9 < -3w + 6$




3 numbers in the solution set:

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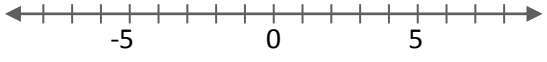
11. $7y - 1 \leq 29 + 2y$




3 numbers in the solution set:

**Use the following matrices:**

$$A = \begin{bmatrix} 7 & 6 \\ 2 & 4 \\ 0 & 3 \end{bmatrix} \qquad B = \begin{bmatrix} 5 & 9 \\ 1 & 2 \end{bmatrix} \qquad C = \begin{bmatrix} 3 & 8 \\ 6 & 9 \end{bmatrix}$$

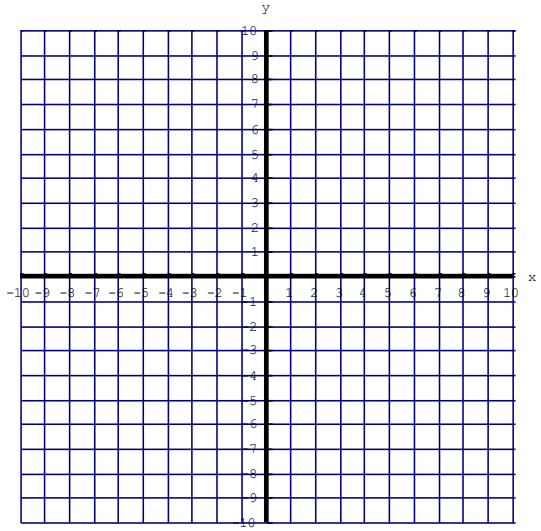
12. Find B – 3C

13. Find AB

# Module 2 Review Homework

**For #1 solve each system of equation by graphing:**

14. $y + x = 5$
    $y = -2x + 8$



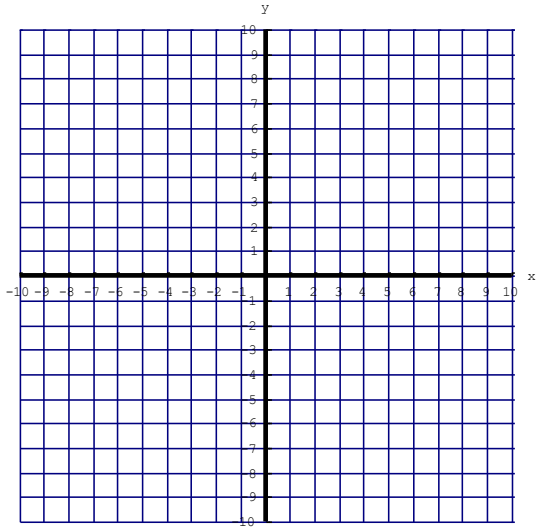
**<u>For #15-16, solve each system of equations using the substitution or elimination:</u>**

15. $y = -x + 15$
    $4x + 3y = 38$

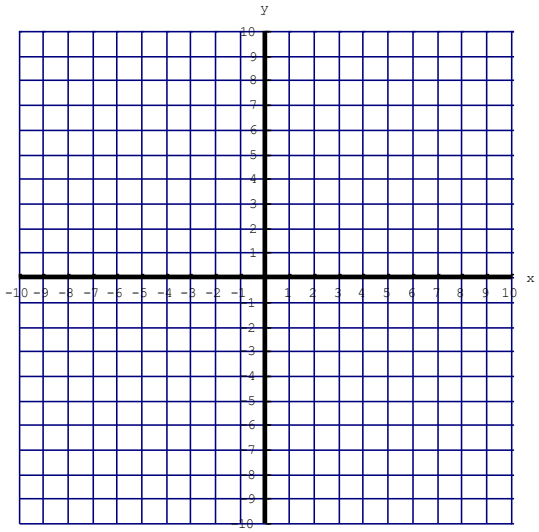
16. $2x - 3y = 4$
    $x + 4y = -9$

**For #17-18, solve each system of inequalities.**

17. $y \leq 2x - 8$
    $y > -\frac{1}{3}x + 4$



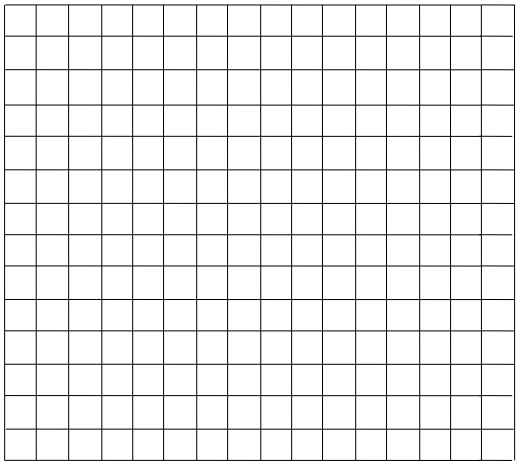
18. $2x + 3y \leq 12$
    $y > x - 3$



19. Jason is buying wings and hot dogs for a party. One package of wings costs $7. Hot dogs cost $4 per pound. He must spend less than $40.
    a. Write an inequality to represent the cost of Jason's food for the party.

    b. Jason knows that he will be buying at least 5 pounds of hot dogs. Write an inequality to represent this situation.

    c. Graph both inequalities and shade the intersection.



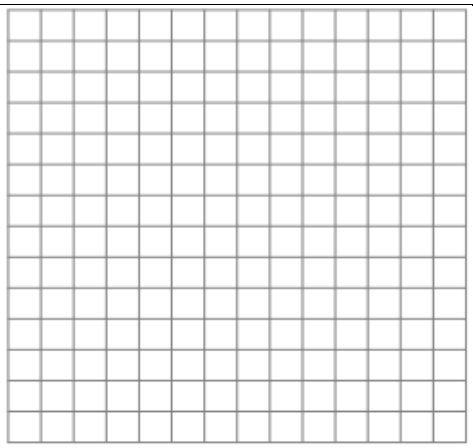
    d. Identify two solutions and justify your answers.

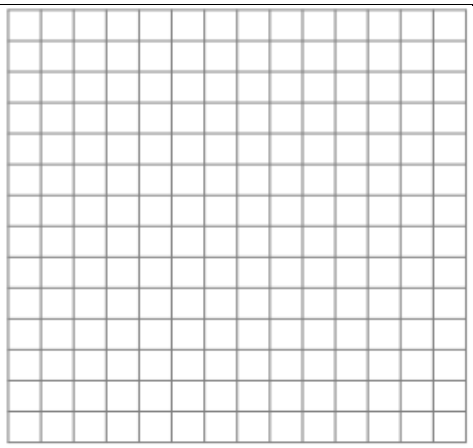
**For #20, solve the system of equation using matrix row reduction:**

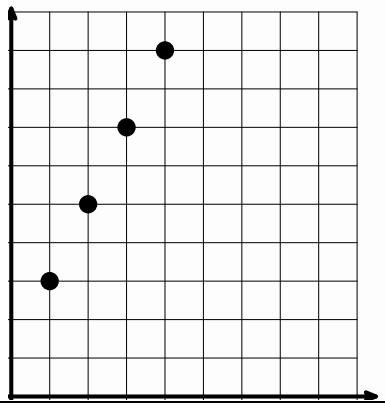
20. $2x - 3y = 4$
    $x + 4y = -9$

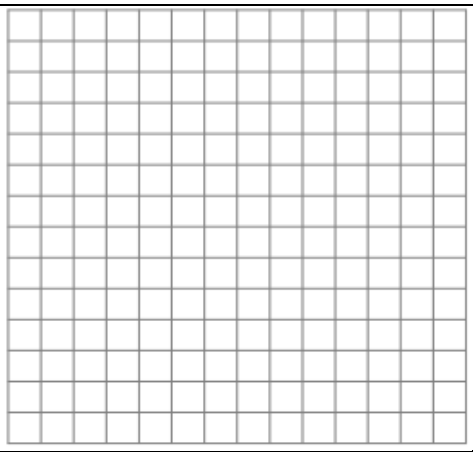
## Module 3 Review

Use the given information to state as much as possible about each sequence. Your answer should include: type of sequence, the common difference or common ration, a table of at least 5 terms, a graph, the recursive rule, and the explicit rule.

| | | |
|---|---|---|
| 21. Type: | $x$ \| $f(x)$ | Common difference/ratio: |
| Recursive rule:<br>$f(1) = 2 \;\; f(x) = f(x-1) + 3$ |  | Explicit rule: |

| | | |
|---|---|---|
| 22. Type: | $x$ \| $f(x)$ | Common difference/ratio: |
| Recursive rule: |  | Explicit rule:<br>$f(x) = 3 \cdot 2^x$ |

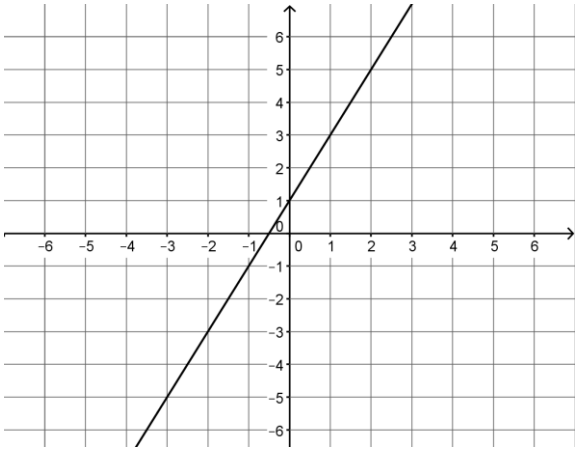
| | | |
|---|---|---|
| 23. Type: | $x$ \| $f(x)$ | Common difference/ratio: |
| Recursive rule: |  | Explicit rule: |

| | | |
|---|---|---|
| 24. Type: | $x$ \| $f(x)$<br>2 \| 20 | Common Ratio = $\frac{1}{2}$ |
| Recursive rule: |  | Explicit rule: |

## *Module 4 Review*

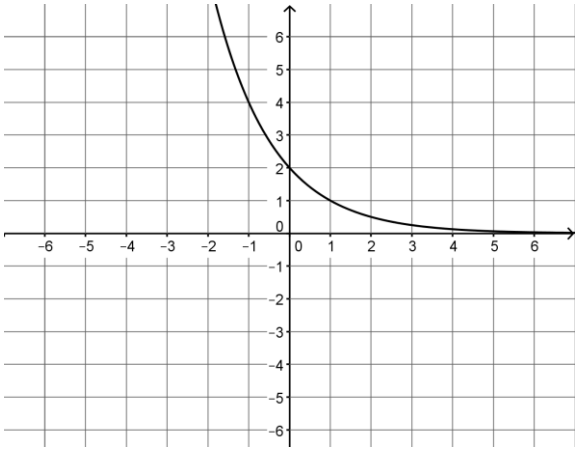
**For each of the functions find the following information.**

25.



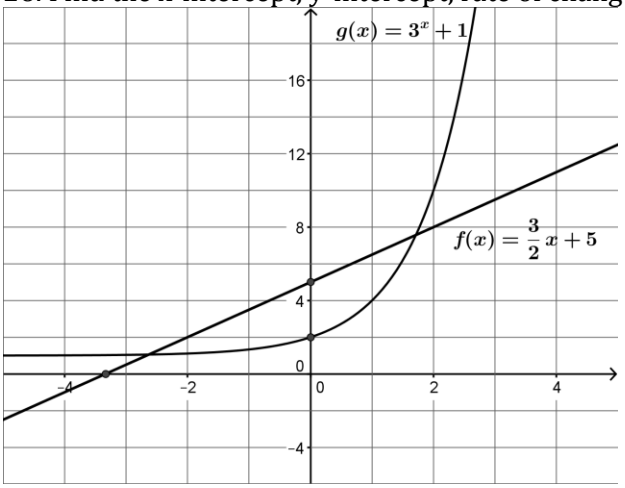
***x* - intercept: _____**
***y*- intercept: _____**
**Rate of change between $x = -1$ and $x = 2$____**

23.

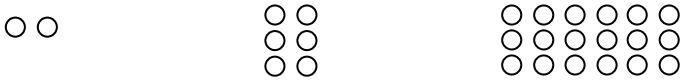


***x* - intercept:_____**
***y*- intercept: _____**
**Rate of change between $x = -1$ and $x = 2$____**

26. Find the x-intercept, y-intercept, rate of change of each function and where is f(x) >g(x)?



27. Write an explicit formula to model the number of dots per day.



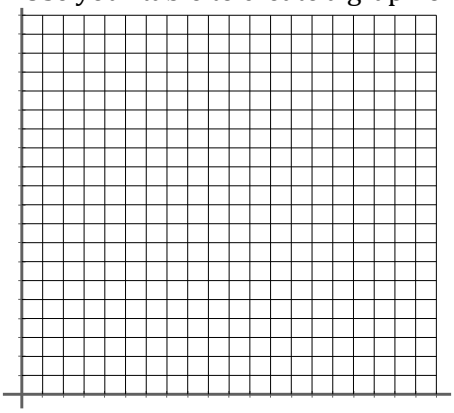
Day 1 Day 2 Day 3

$f(x) =$_____

Model the function using the table provided:

| Day | Number of Dots |
|---|---|
| | |
| | |
| | |
| | |

Use your table to create a graph of the function:



28. Bank Plans:
Suppose you worked mowing lawns all summer and earned $100. Two savings institutions, Linear Luck and Exponential Experiment want you to let them "hold onto your money" for a while.

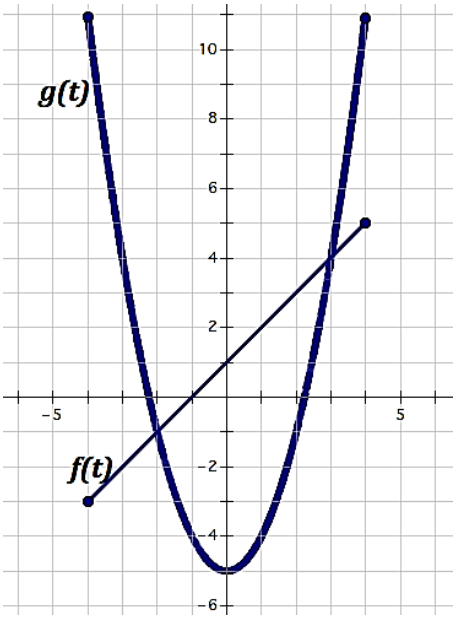
**Linear Luck**: This savings plan will add $100 to your balance for every month that you leave your money in the account.

**Exponential Experiment**: This savings plan will multiply your balance by 2 every month that you leave your money in their account.

Analyze the plans: Write the explicit function for each account, and decide which account is best at what time

Module 5 Review

Consider the linear graph of $f(t)$ and the nonlinear graph of $g(t)$ to answer questions 9-14. Approximations are appropriate answers.




29. Where is $f(t) = g(t)$? _____

30. Where is $f(t) > g(t)$? _____

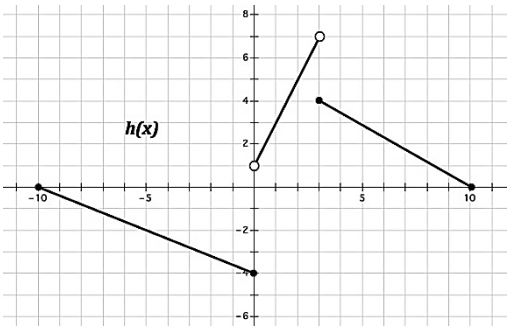
31. What is $f(0) + g(0)$? _____

32. What is $f(-1) + g(-1)$? _____

33. Which is greater: $f(0)$ *or* $g(-3)$? _____

34. Graph: $f(t) + g(t)$ from $[-1,3]$ _____

35. Use the graph to answer the following questions?




a. Where is the graph increasing?
b. Where is the graph decreasing?
c. What is the domain?
d. What is the range?
e. Maximum Value?
f. Minimum Value?
g. When is f(x) > 0?

36. Which of the following relations are functions?

- $\{(3,1),(4,5),(5,7),(3,1),(0,0)\}$
- $\{(3,1),(3,5),(3,7),(3,2),(3,0)\}$
- $\{(3,1),(4,1),(5,1),(2,1),(0,1)\}$
- $\{(2,1),(4,5),(7,7),(3,1),(5,0)\}$