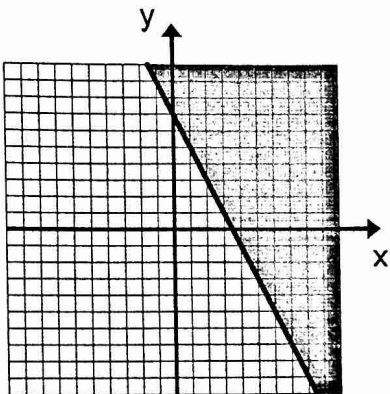


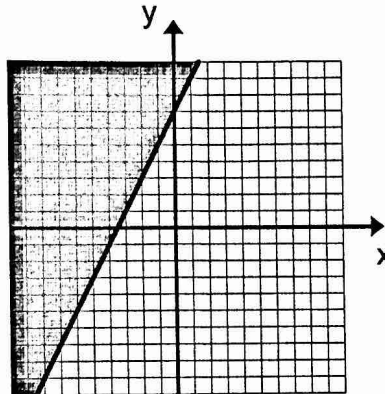
1.1 I can demonstrate understanding of how to represent a region on a graph with an inequality.

1. Graph $y \leq -2x + 7$

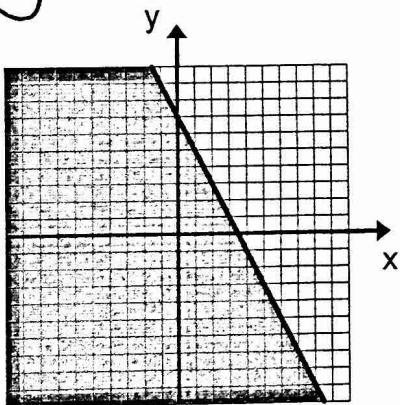
A.



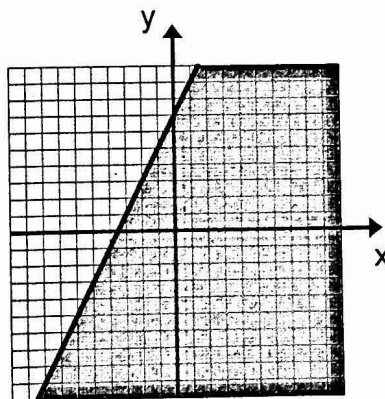
B.



C.



D.

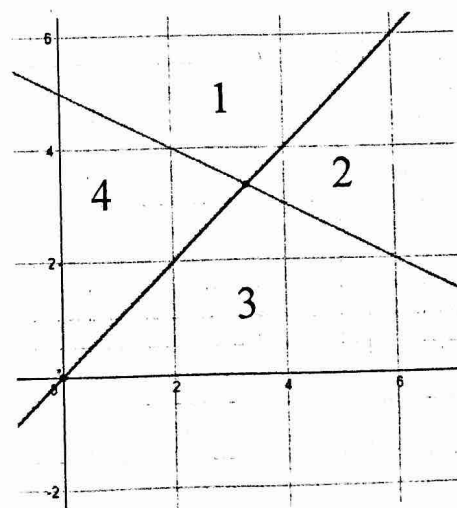


2. Which region is the feasible region of the system of inequalities given below?

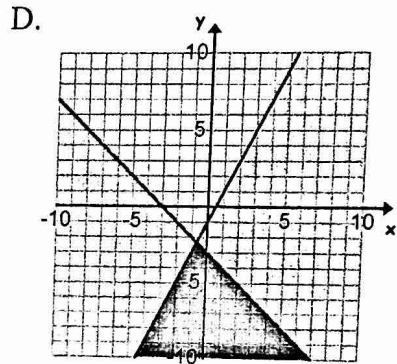
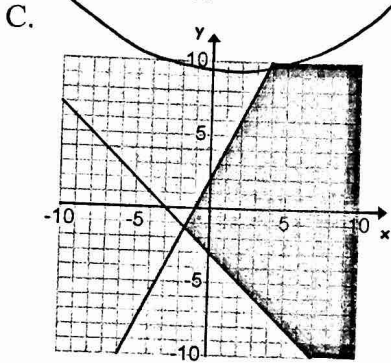
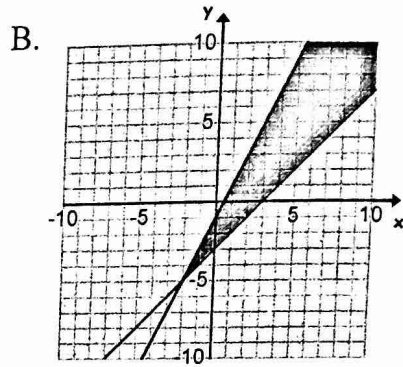
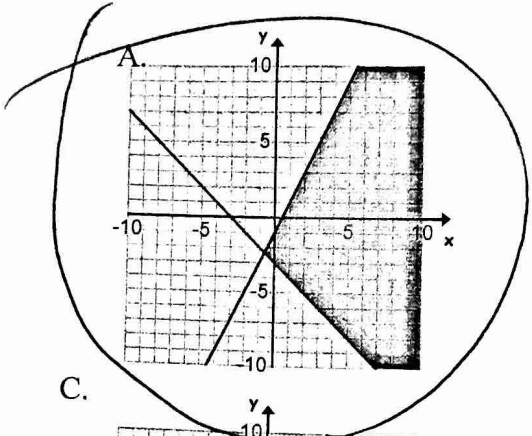
$$y \geq x$$

$$y \leq -\frac{1}{2}x + 5$$

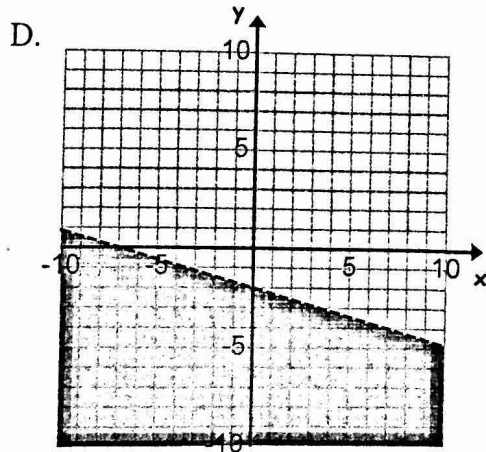
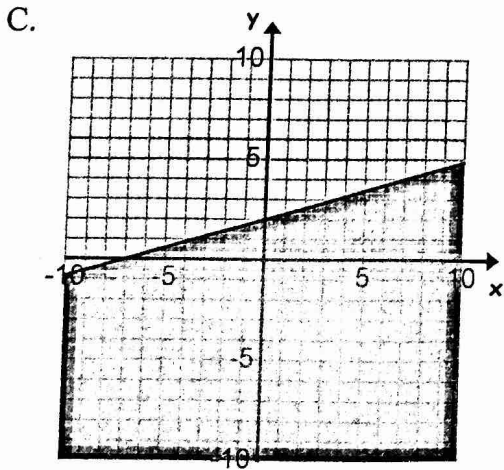
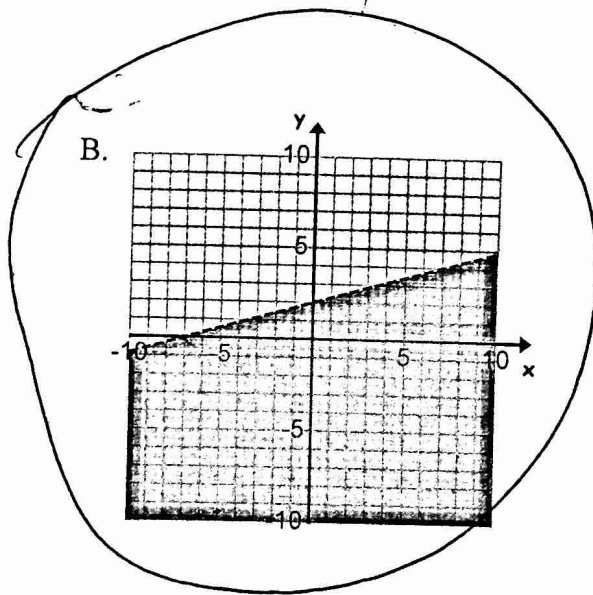
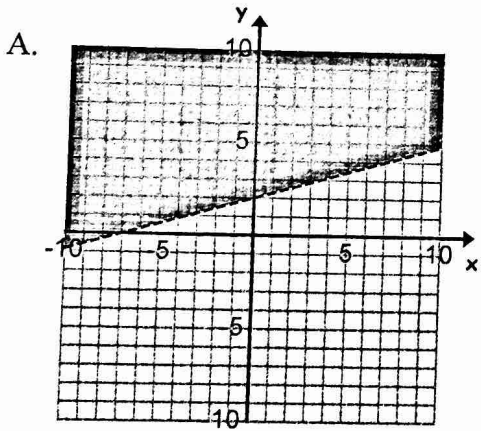
- a. 1
- b. 2
- c. 3
- d. 4



3. Graph the system of inequalities $\begin{cases} y \leq 2x - 1 \\ x + y \geq -3 \end{cases}$

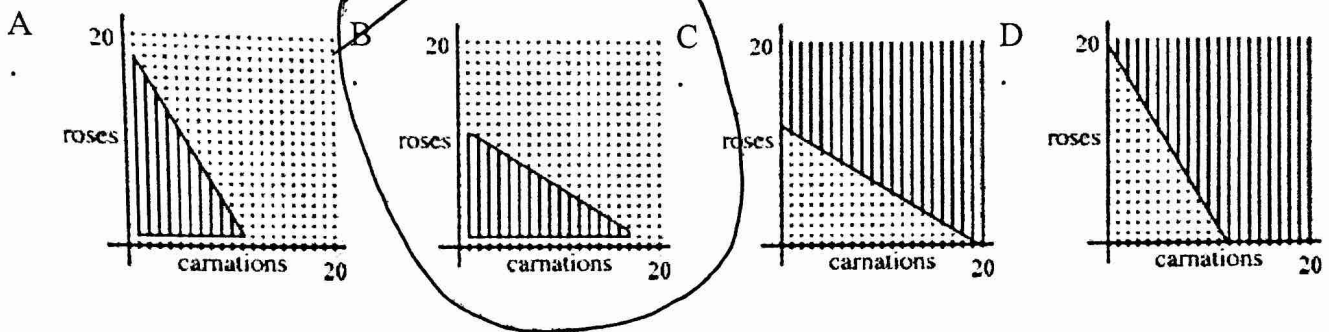


4. Graph $2x - 7y > -14$



1.2 I can demonstrate understanding of real-world situations that can be modeled as linear equations or inequalities.

5. Sally wants to buy her friend a bouquet for his birthday. She wants it to contain both carnations and roses. She has \$28.00 to spend. Carnations cost \$1.43 each and roses cost \$2.36 each. Which graph below represents the possible combinations of numbers of carnations and roses Sally can afford to buy?



6. 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 at least \$40. Write an inequality to represent the cost of Jason's food for the party.

- a. $7x + 4y \geq 40$
- b. $7x + 4y \leq 40$
- c. $7x + 4y > 40$
- d. $7x + 4y < 40$

7. A grocer buys cases of almonds and walnuts. Almonds are packaged 20 bags per case and walnuts are packaged 25 bags per case. The grocer pays \$40 per case of almonds and \$25 per case of walnuts. The grocer orders no more than 300 bags of almonds and walnuts together and will pay no more than \$400.

The profit on each case of almonds is \$17 and the profit on each case of walnuts is \$15.

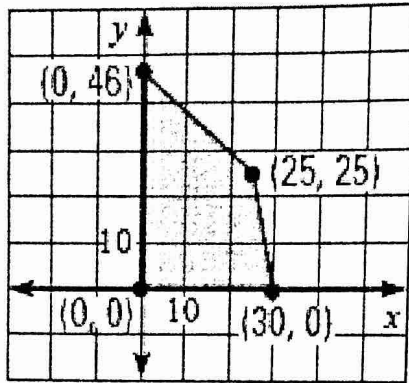
Which of the following are constraints for the situation above? Choose ALL that apply.

- A. $20x + 25y \leq 300$
- B. $x + y < 45$
- C. $40x + 25y \leq 400$
- D. $17x + 15y = C$
- E. $x \geq 0$
- F. $y \geq 0$

1.3 I can represent real world situations as a linear programming problem and demonstrate an understanding of how to find reasonable solutions

8. Given the feasible region shown, what is the maximum value of the objective function:
 $p(x) = 4x + 4y$

- A. 0
- B. 60
- C. 200**
- D. 276



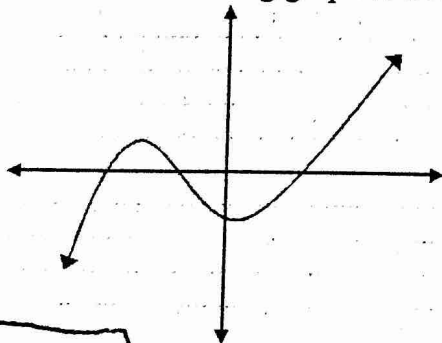
2.1 I can demonstrate understanding of the definition of a function and can determine when relations are functions given a graph, table or real-world situation.

9. Is this a function?

x	y
-1	4
5	-1
-6	3
-4	2
5	-3
10	15
3	-4

- a. YES
- b. NO**

10. Determine if the following graph is a function.



- a. YES**

2.2 I understand the meaning of function notation and can evaluate functions for a given input.

11. Given the following function $f(x) = 6x + 3$, find $f(3)$.
- a. 12
 - b. 0
 - c. 21
 - d. 5

12. Given the following function $f(x) = -x^2 + 2$, find $f(-5)$.

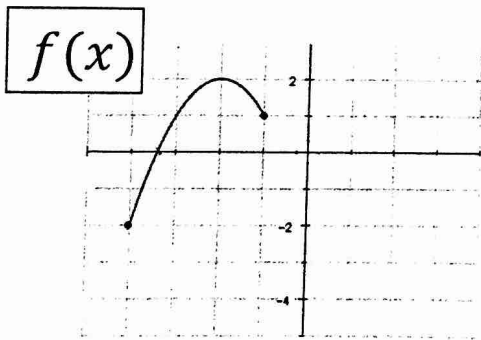
- ~~a. 27~~
- b. -23
 - c. -27
 - d. 23

13. Using the table below find $f(x) = 2$

- a. 0
- b. -4
- c. 3
- d. 4

x	f(x)
0	-4
1	-2
2	0
3	2
4	4

Answer #14 and #15 using the graph $f(x)$ and the table $g(x)$ below.



x	g(x)
-2	4
0	0
2	-4
4	-8

14. Determine if the statement is true or false.

$$12 > 4$$

$$f(-2) > g(-2)$$

Circle: True or False

15. The x-coordinate of the x-intercept of $f(x)$ is less than the x-coordinate of the x-intercept of $g(x)$.

Circle: True or False

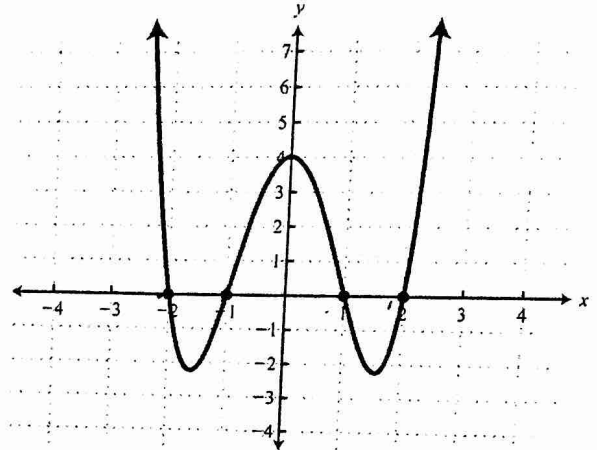
$$(-3.5, 0) \quad (0, 0)$$

$$-3.5 < 0$$

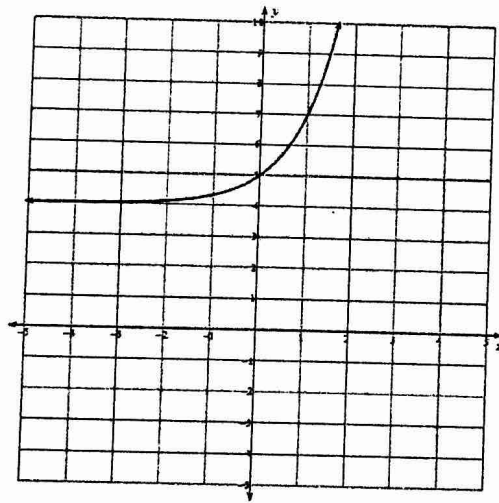
2.3 I can demonstrate understanding of the significant features of a function represented by a graph, a table, or an equation and the relationship these features have to real-world situations.

16. Determine which of the following statements are false.

- a. The domain is $-2 \leq x \leq 2$
- b. The range is $y \geq -2$
- c. The x intercepts are $(-2,0)$ $(-1,0)$ $(1,0)$ $(2,0)$
- d. The y-intercept is $(0,4)$



17. What is the domain and range of the function graphed below?



- a. Domain: $x < 4$, Range: $y \geq 4$
- b. Domain: *All Reals*, Range: $y > 4$
- c. Domain: *All Reals*, Range: *All Reals*
- d. Domain: $x < 4$, Range: *All Reals*

3.1 I can demonstrate understanding about exponential functions and compare situations and equations for exponential functions to those for linear functions.

18. The student enrollment E of a high school was 1240 in 1990 and increased by 15% per year until 1996. Which exponential growth model shows the school's student enrollment in terms of t , the number of years since 1990?

- a) $E = 15(1240)^t$
- b) $E = 1240(1.15)^t$**
- c) $E = 1240(15)^t$
- d) $E = 0.15(1240)^t$

$(1240 | +.15)^t$

19. What type of function is $f(x) = 6500(0.05)^x$?

- a) Linear function
- b) Quadratic function
- c) Exponential Growth function
- d) Exponential Decay function**

20. What type of function is shown in the table?

- a) Linear function**
- b) Quadratic function
- c) Exponential Growth function
- d) Exponential Decay function

x	y
-12	-2
-7	2
-2	6
3	10
8	14

+6
+4
+4
+4

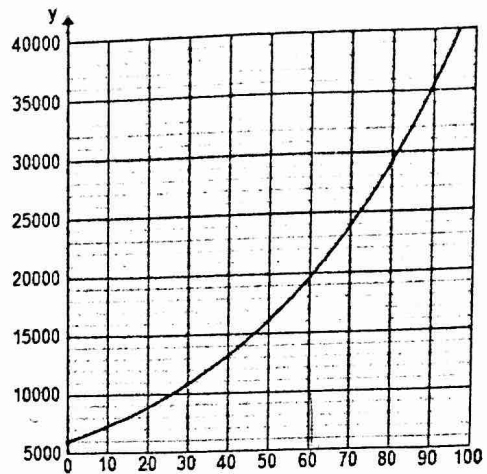
3.2 I can use tables and graphs to solve exponential equations including real world situations and translate between representations.

21. The number of bacteria in a sample doubles every day. The table shows the culture for days 0 through 4. If the sample has 64 bacteria on day 3, how many did it start with on day 0?

DAYS	0	1	2	3	4
# of bacteria	8	16	32	64	

- a) 512
- b) 192
- c) 16
- d) 8**

22. The graph on the right shows the projected population of Coleman, Texas from 1990 to 2080, which grows at a rate of 2% annually. Estimate the population in the year 2050.



- a) 16,000
- b) 20,000**
- c) 24,000
- d) 29,000

3.3 I can evaluate exponential functions in the form $y = ab^x$ and relate the meaning to the context of a real-world situation.

23. You drink a beverage with 120 milligrams of caffeine. Each hour, h , the amount of caffeine, c , in your system decreases by 12%. How many milligrams of caffeine will you have in your system after 4 hours?

- a) 25.88 mg
- b) 71.96 mg**
- c) 105.60 mg
- d) 422.40 mg

$$120(1 - .12)^4$$

24. Suppose you deposit \$2000 in an account that pays 6.5% annual interest. What is the balance after 3 years if the interest is compounded yearly?

Use the function $f(t) = 2000(1 + .065)^t$.

- a) \$2,134.32
- b) \$5,835.96
- c) \$2,415.90**
- d) \$2,168.51

3.4 I can demonstrate understanding of the significant features of a graph of exponential function and their relationship to real world situations.

25. What is the asymptote of the equations $y = 4(.5)^{x-3} + 2$

- a) $y = -3$
- b) $y = .5$
- c) $y = 0$
- d) $y = 2$**