Algebra 3-4 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Per:\_\_\_\_\_

1st Semester Review Unit 1 HW Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Solve algebraically. Check your solutions.
2. **Solve the system of equations:**

1. The school that Lisa goes to is selling tickets to the annual talent show. On the first day of ticket sales the school sold 4 senior citizen tickets and 5 student tickets for a total of $102. The school took in $126 on the second day by selling 7 senior citizen tickets and 5 student tickets. What is the price each of one senior citizen ticket and one student ticket?
2. Seven smoothies and twelve cookies cost a total of Twelve smoothies cost less than 27 cookies. Find the cost of a smoothie and the cost of a cookie.

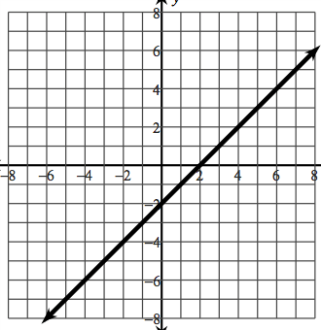
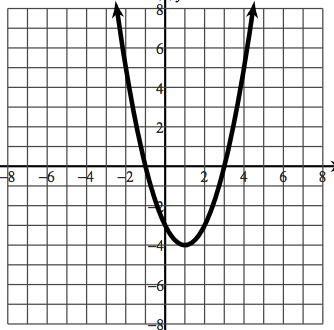
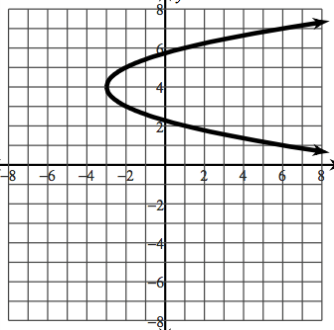
Algebra 3-4 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Per:\_\_\_\_\_

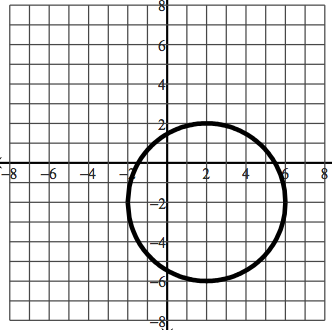
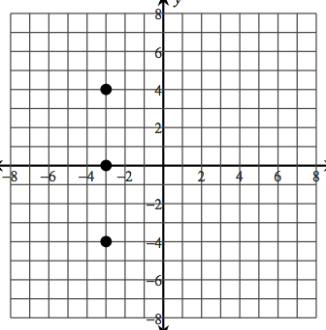
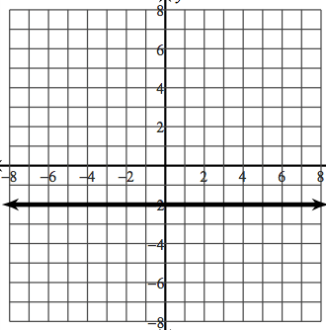
1st Semester Review Unit 2 HW Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **Define the following:**

* Domain:
* Range:
* Function:

1. **For each graph give the domain, range, and decide if it is a function.**

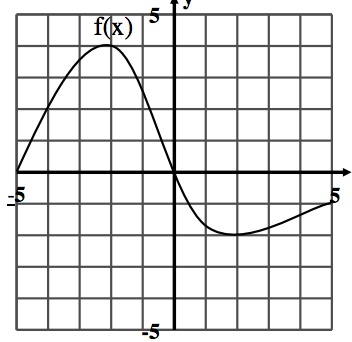
1. **Evaluate the following expressions given the functions below:**

Find

Find

Find

Find

1. **Given the graph of the function, find: **

x when

x when

1. Find the inverses of each.
2. 
3. f(x) = + 2
4. verify the following are inverses. Show all work.
5. 
6. 

Algebra 3-4 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Per:\_\_\_\_\_

1st Semester Review Unit 3 HW Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Write an exponential equation that goes through the points (4, 31.1) and (10, 92.88).

2. Write an exponential equation to model the population 'x' years after year zero.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| x: # years after year zero | 0 | 1 | 2 | 3 | 4 | 5 |
| y: population |  |  | 15,252 |  |  | 28,730 |

3. Solve. a) x5= 18 b) 32x-3=30

c) log58 = 3x + 4 d) 2(5)x-5 – 3 = 55

e)  f) 

4. The average cost of a movie ticket is $9.50. The price increases 2.5% per year.

* 1. Write an exponential equation to model this situation. Define your variables.
  2. What will be the cost of a movie ticket in 5 years?
  3. Assuming the price continues to grow at this rate, how long will it take until the price of a ticket doubles? Show ALL work.
  4. To stay in business movie theaters need the price of tickets to increase to $25 within the next 10 years. What percent growth would be required for movie theaters to meet this goal? Show ALL work.

5. Find the inverse of f(x) = log2(x – 1) + 2 .

Check your inverse by finding some points on f(x) and f-1(x).

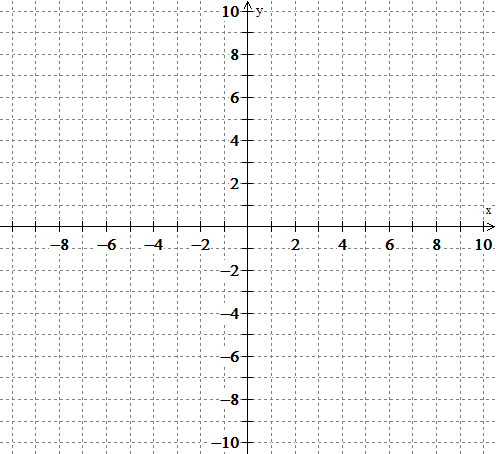
Algebra 3-4 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Per:\_\_\_\_\_

1st Semester Review Unit 4 HW Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

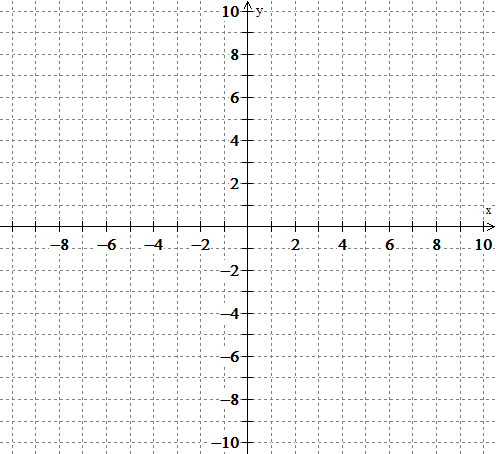
**\*\*\* NO CALCULATOR \*\*\* NO CALCULATOR \*\*\* NO CALCULATOR \*\*\***

* + - 1. Describe what transformations a, h, and k perform.
      2. Write the equation of an absolute value function with a vertical stretch of 2, is shifted 3 units right, and is 4 units down.
      3. Write the equation of a square root function that is reflected over the x-axis, has a vertical compression of and is shifted 7 units up.
      4. For the following equations rewrite in the requested form(s). Then sketch a graph of each.

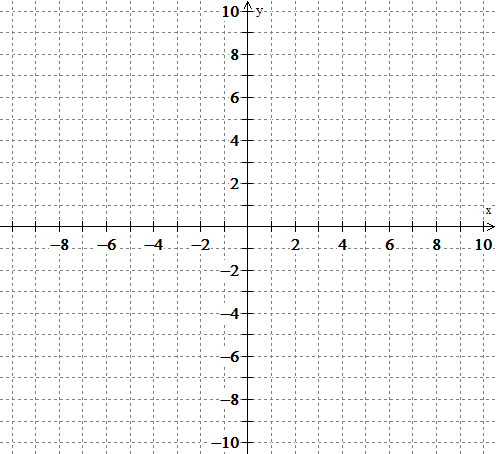
1. Write in standard form:



1. Write in vertex form:

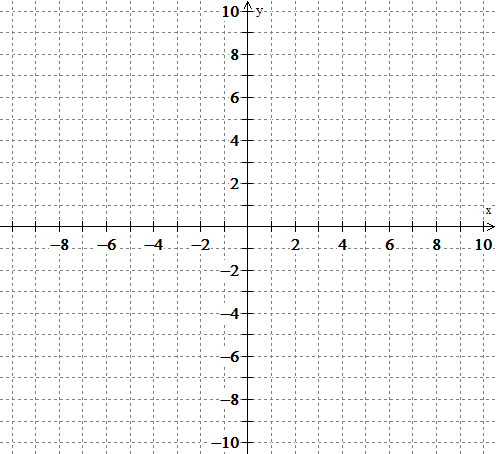
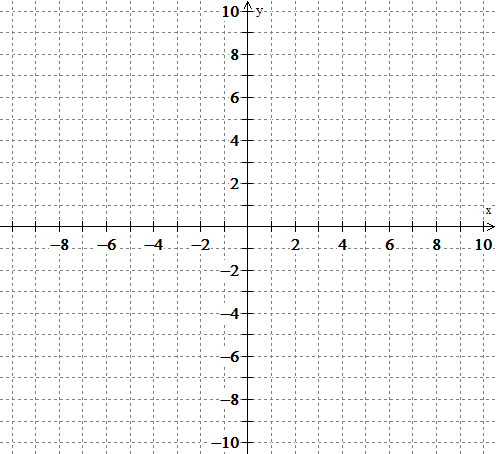
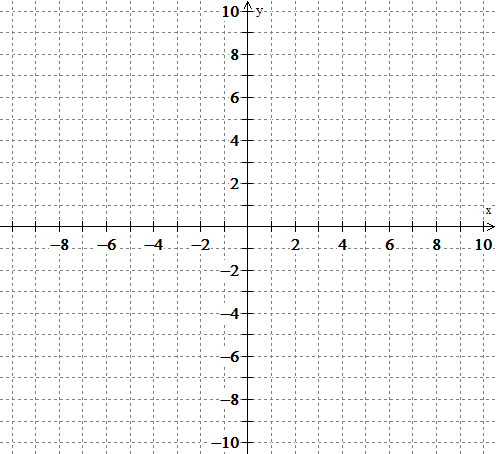


1. Write in vertex form: (hint: write in standard form first!)

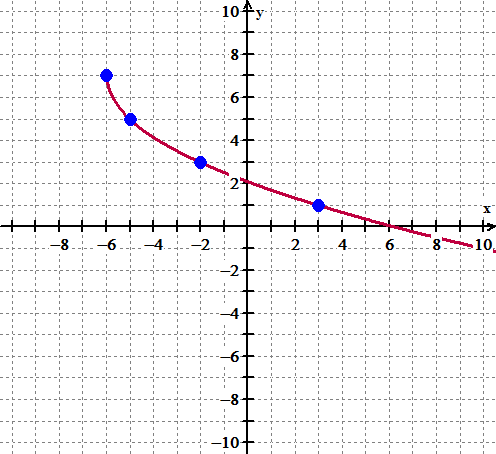
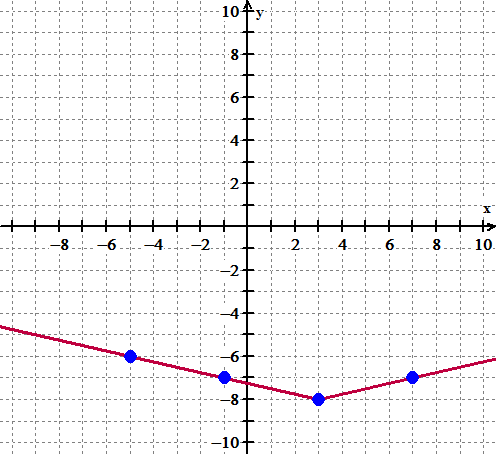


* + - 1. Graph each equation **without a calculator**.

a) b) c)

* + - 1. Write the equation of each graph:

* + - 1. Find the exact equation of an absolute value function with a locator point at and passes through the point .
      2. Find the exact equation of a cubic function with a locator point at and passes through the point .

9. Factor.