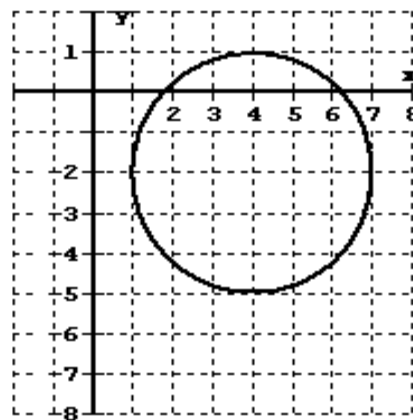
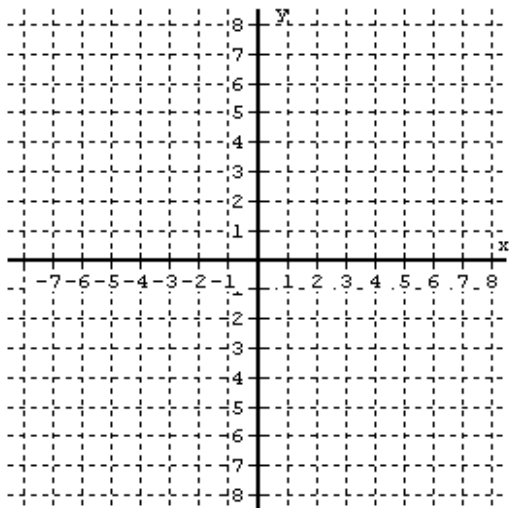


- 1) Let  $(6, -1)$  and  $(9, 5)$  be the endpoints of a line segment.
  - A) Find the EXACT length of the segment. Simplify your Radical.
  - B) Round your answer in part A) above to two decimal places.
  - C) Find the coordinates of the midpoint of the line segment above.



2)A) Graph the following circle:

$$(x + 3)^2 + (y - 1)^2 = 16$$

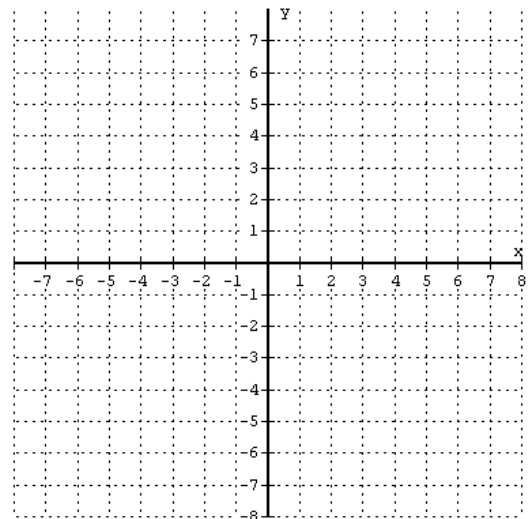
- B) State the Domain
- C) State the Range

3) A) Find an equation of the circle graphed above.

- B) State the Domain
- C) State the Range

4) The points  $(-1, -7)$  and  $(5, 1)$  are the endpoints of the diameter of a circle.

- A) Graph the circle.
- B) Find an equation of the circle. Show your work.



5) Use your calculator and evaluate the following expressions. Round your answers to 3 decimal places.

A)  $10,000 \left( 1 + \frac{0.03}{365} \right)^{(365 \times 2)} = \underline{\hspace{2cm}}$

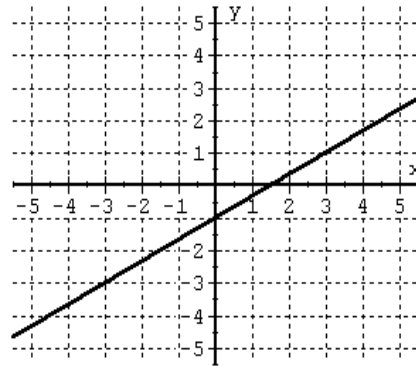
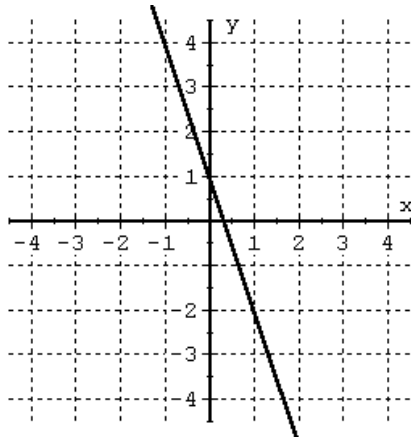
Calculator Notation: \_\_\_\_\_

B)  $\frac{7 + \sqrt[3]{2}}{6} = \underline{\hspace{2cm}}$

Calculator Notation: \_\_\_\_\_

6) Find an equation of the line that passes through the points (8,2) and (11,-4)  
 Put your answer in the form:  $y = mx + b$

Find an EQUATION for each of the Lines Graphed Below



7) A) \_\_\_\_\_

B) \_\_\_\_\_

8) Suppose a company is shipping small items (earrings) across the country. The Post Office charges the same amount to ship the items in the box regardless of its destination or weight. If you buy 50 items, you pay \$333. If you buy 75 items, you pay \$495.50. How much will it cost you for 100 items? (Hint: You do not need to use regression. Use one of the equations of a line). Show your work.

9) A) Graph  $y = (x - 3)^2 - 4$

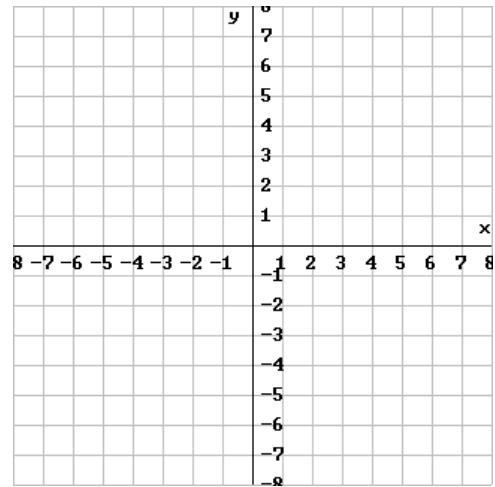
B) Find the x-intercept(s).

C) Find the y-intercept

D) Is the relation above a function?

E) State the Domain

F) State the Range

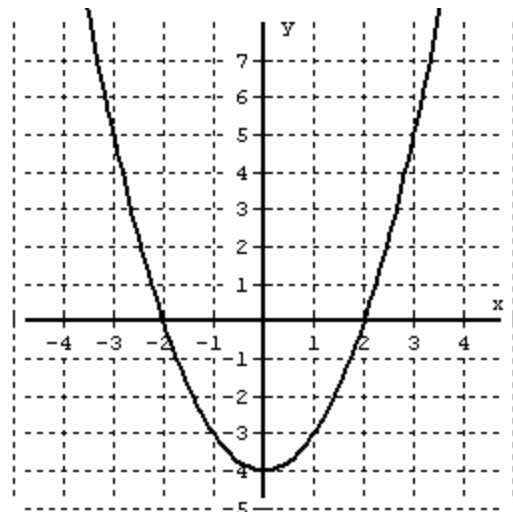
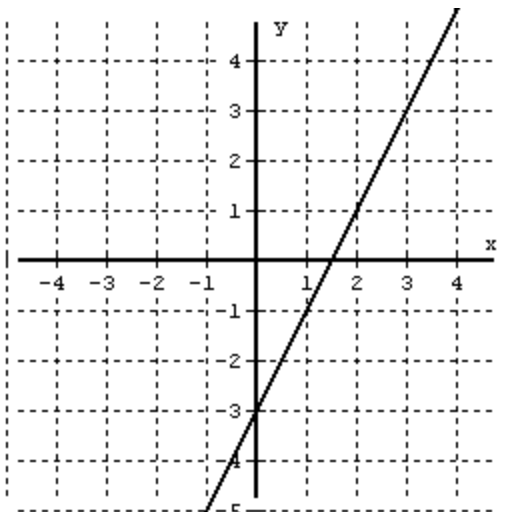


10) Let  $f(x) = x^3 + 1$  and  $g(x) = 2x + 3$ .

Find the following:

A)  $3f(2) + g(1)$

B)  $g(4x + 1)$



Use the graphs above to answer the following problems.

11) A) Find  $f(2)$

B) Find  $2f(1) + f(3)$

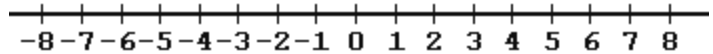
**Solve the Following Linear Equations by Hand. Show Your Work.**

12)  $4(5x + 3) = 3(2x - 5)$

13)  $\frac{1}{4} + \frac{1}{6} = \frac{1}{x}$

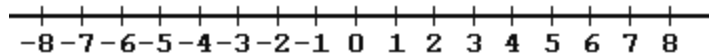
- 
- A) Solve the Following Inequalities,**  
**B) Graph the Solutions on the Number Lines**  
**C) Express the Solutions using Interval Notation**

14)  $5 - 3x > -4$



Interval }  
Notation } →

15)  $-5 \leq 2x + 1 \leq 5$



Interval }  
Notation } →

16) **Use the “Rule of Five” to Analyze the Following Long Distance Phone Plans**

Plan A	8¢ per minute Plan
Plan B	\$5.00 plus 3¢ per minute Plan

**Numerically**

Find the cost of making no long distance phone calls for each plan.

Find the cost of making 1 hour of phone calls for each plan.

Find the cost of making 3 hours of phone calls for each plan.

	Plan A	Plan B
0 hours		
1 hour		
3 hours		

**Graphically / Electronically**

**Graph** the two Plans on the grid to the right.

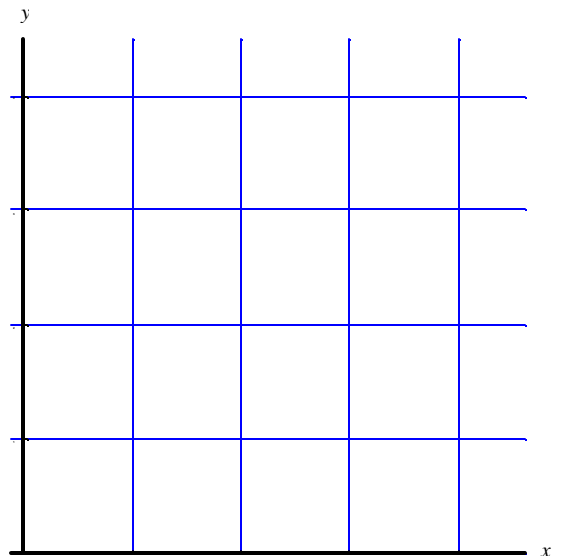
**Include a Title, Label the Axes, and Label the Lines.**

Assume that you will not talk for more than 4 hours.

Below, state the **Equation** for each Plan.

Plan A:  $Y1 =$

Plan B:  $Y2 =$



**Algebraically (by hand)**

Exactly when (at how many minutes) will the cost of Plan A and the Plan B be the same? Show your work.

**Verbally (written): Use Complete Sentences to State Your Conclusion**

Which Plan (and when) is the cheaper Plan?

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