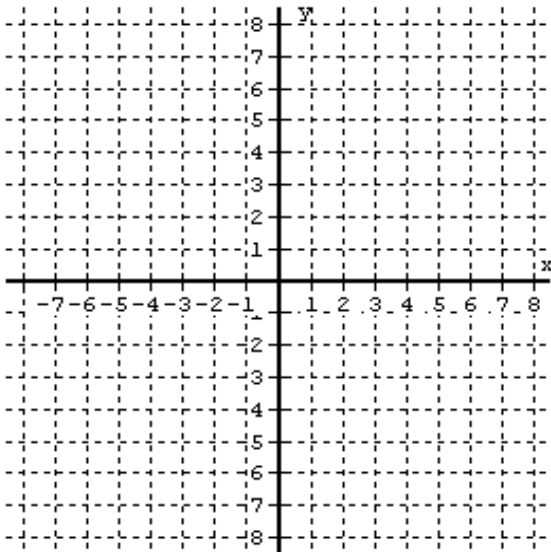


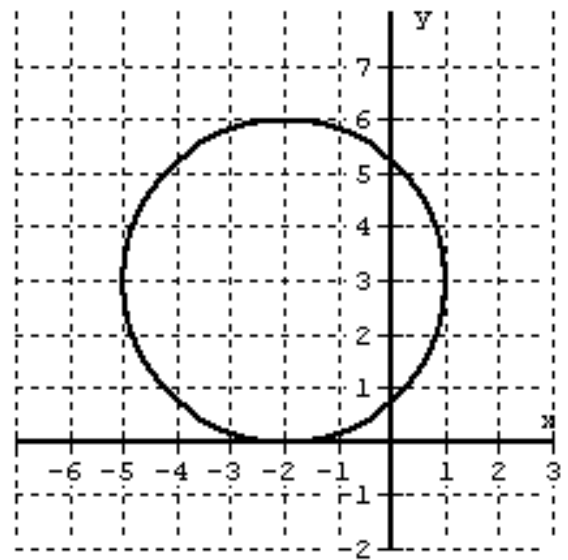
- 1) Let $(5, -3)$ and $(1, 6)$ be the endpoints of a line segment.
 - A) Find the EXACT length of the segment. Simplify your Radical.
 - B) Round your answer in part A) above to two decimal places.
 - C) Find the coordinates of the midpoint of the line segment above.



2)A) Graph the following circle:

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

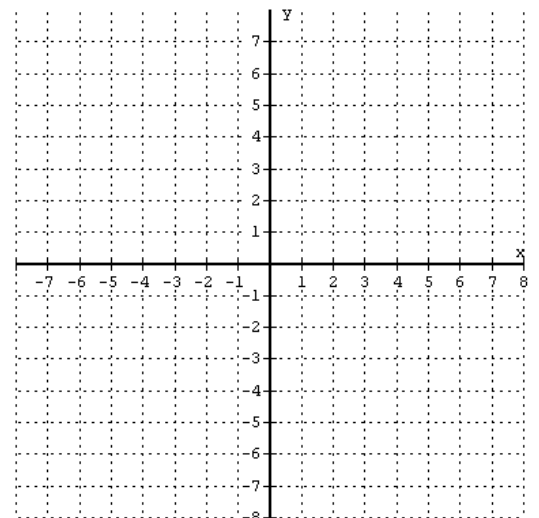
- B) State the Domain
- C) State the Range



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) $6,000 \left(1 + \frac{0.04}{12} \right)^{(12 \times 13)} = \underline{\hspace{2cm}}$

Calculator Notation: _____

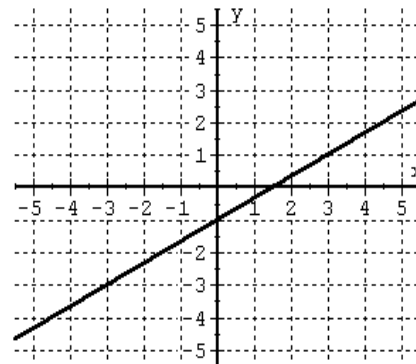
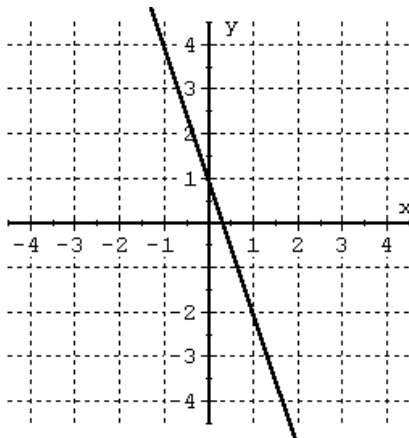
B) $\frac{5 + \sqrt[3]{7}}{6 - \sqrt{2}} = \underline{\hspace{2cm}}$

Calculator Notation: _____

6) A) Find an equation of the line that passes through the points (8,2) and (11,-4)

B) Find an equation of the line that passes through the point (8,-7) and is **perpendicular** to the **y-axis**.

Find an EQUATION for each of the Lines Graphed Below



7) A) _____

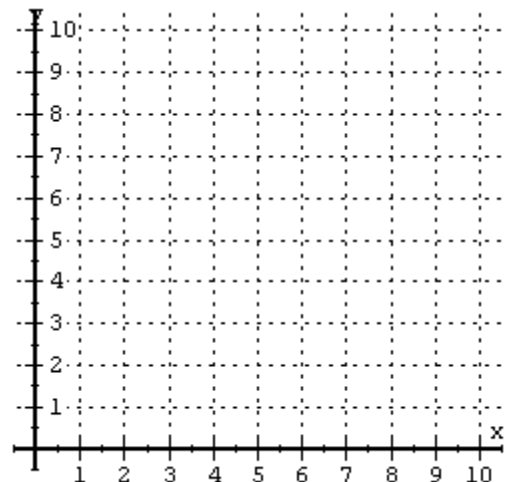
B) _____

8) A) Use the table of values to the right and create a scatter plot.

B) Use your graphing calculator and **find an equation of the line of best fit**. Round your values to 2 decimal places.

C) Graph the line of best fit over your scatter plot.

| x | y |
|---|---|
| 2 | 7 |
| 4 | 6 |
| 5 | 4 |
| 6 | 2 |
| 9 | 1 |



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

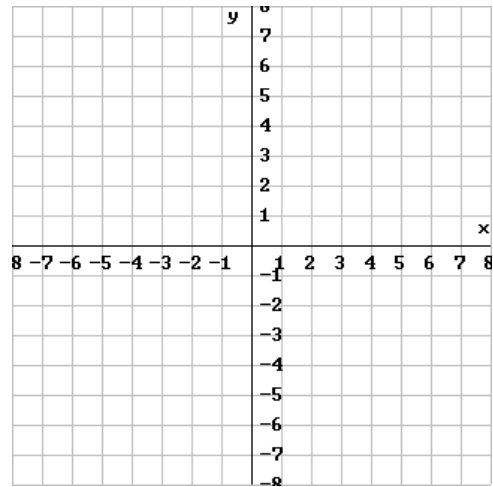
B) Find the x-intercept(s).

C) Find the y-intercept

D) Is the relation above a function?

E) State the Domain

F) State the Range

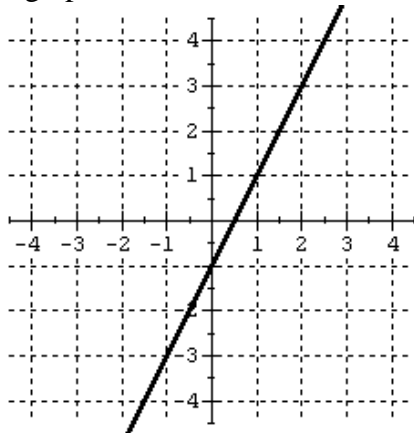


10) Let $f(x) = x^2 - 2x + 5$ and $g(x) = 3x + 4$. Find the following:

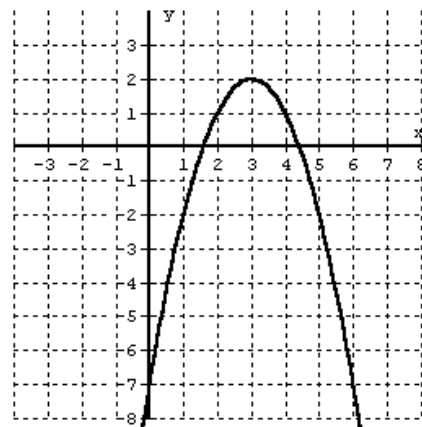
A) $2f(-1) + g(2)$

B) $g(2x + 7)$

Use the graphs below to answer the following problems.



11) A) Find $f(-1)$



B) Find $f(6) + 3f(1)$

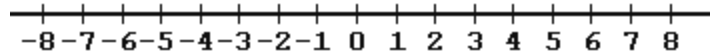
Solve the Following Linear Equations by Hand. Show Your Work.

12) $3x - 7 = 4(2x + 1)$

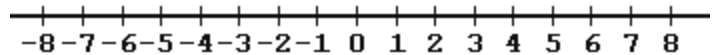
13) $\frac{3}{4}x - \frac{1}{6} = \frac{1}{2}x + 5$

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

14) $7 - 2x > 13$

Interval }
Notation } →

15) $-3 \leq 2x - 1 \leq 5$

Interval }
Notation } →

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

| | |
|--------|--------------------------------|
| Plan A | 6¢ per minute Plan |
| Plan B | \$4.00 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.

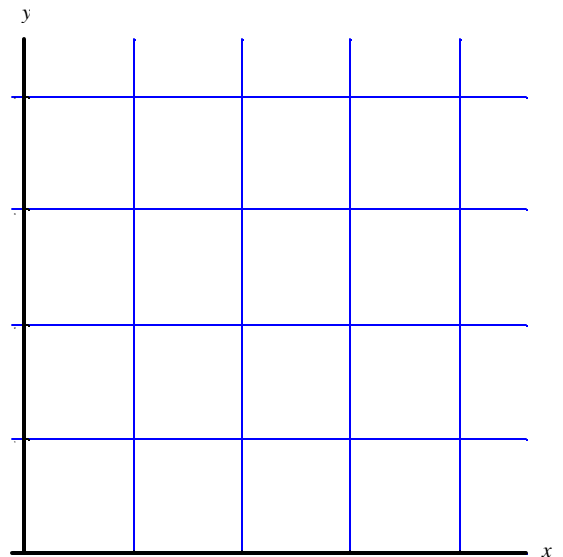
Include a Title, Label the Axes, and Label the Lines.

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

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

Plan A: $Y_1 =$

Plan B: $Y_2 =$



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 “Better” Plan?
