

R.2 Portfolio Extended Problem #1

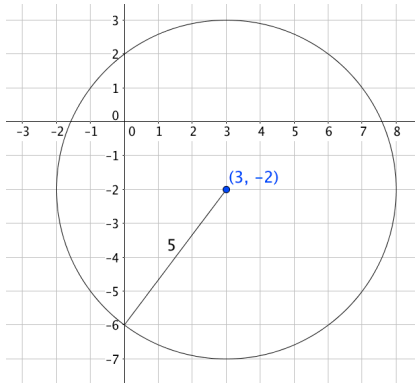
Solve the system of equations both **ALGEBRAICALLY** and **GRAPHICALLY**. Make sure to state the solutions:

$$\begin{aligned}y &= 2x^2 - 11x - 59 \\5 &= x - y\end{aligned}$$

R.2 Portfolio Extended Problem #2

In Geometry, we graphed lots of circles with a center and a radius!

Examples: $(x - 3)^2 + (y + 2)^2 = 25$ has a center of $(3, -2)$ (opposite signs) and a radius of 5 (take the square root). Here is the equation of the circle.



Using the information above, solve the system of equations both **ALGEBRAICALLY** and **GRAPHICALLY**:

$$\begin{aligned}y &= x + 3 \\(x + 4)^2 + (y - 1)^2 &= 4\end{aligned}$$

R.2 Portfolio Extended Problem #3

Solve the system of equations below and show **ALL** work:

$$\begin{aligned}3x + 3y - 5z &= 4 \\-x - 5y + 5z &= 6 \\-9x - 5y + 8z &= -1\end{aligned}$$

R.2 Portfolio Extended Problem #4

The sum of three numbers is 16. The largest number is equal to the sum of the other two, and 3 times the smallest number is 1 more than the largest. Find the three numbers. SHOW ALL WORK!

R.2 Portfolio Extended Problem #5

A furniture company makes loungers, chairs, and footstools out of wood, fabric, and stuffing. The number of units of each of the materials needed for each of the products is given in the table below.

	Wood	Fabric	Stuffing
Lounger	40	40	20
Chair	30	20	20
Footstool	20	10	10

How many of each product can be made if there are 110 units of wood, 880 units of fabric, and 660 units of stuffing available? Set up a system of equations that would be used to solve this problem and solve it!