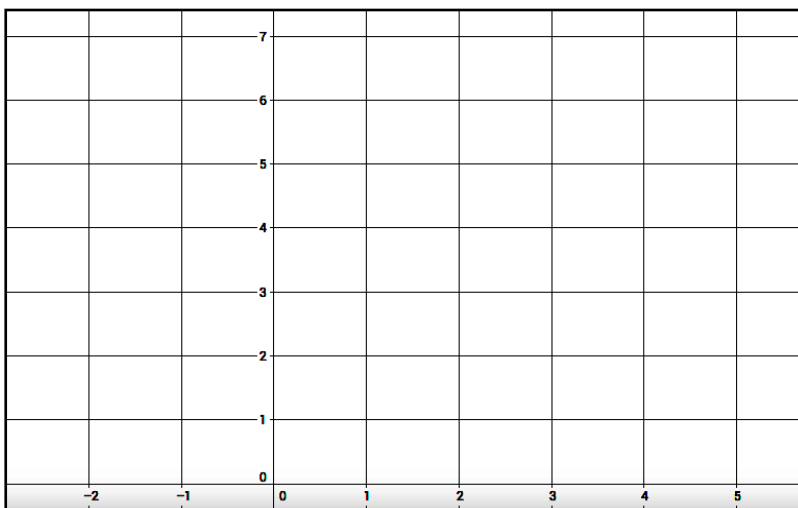


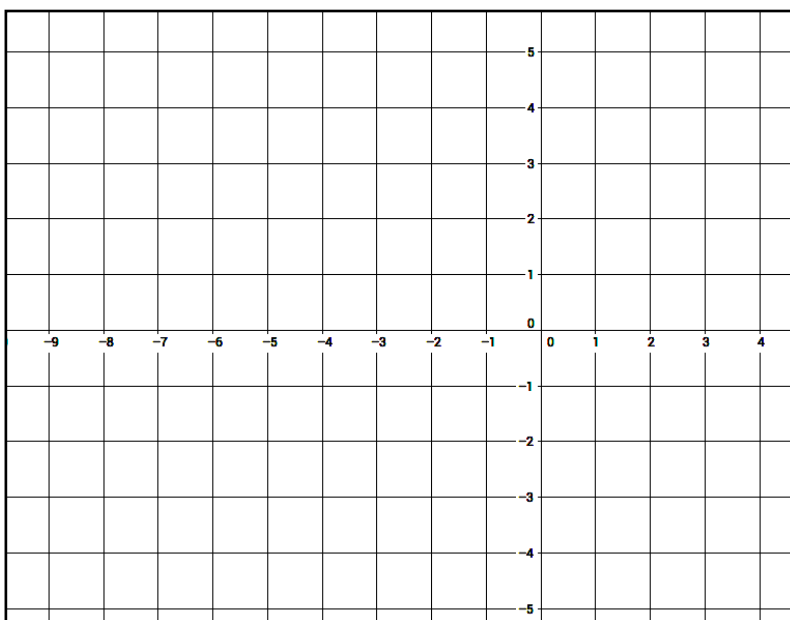
Solving Systems of Equations Graphically and Algebraically PART II

Solve each of the following GRAPHICALLY AND ALGEBRAICALLY. Show all your work for full credit. Check all solutions on DESMOS.

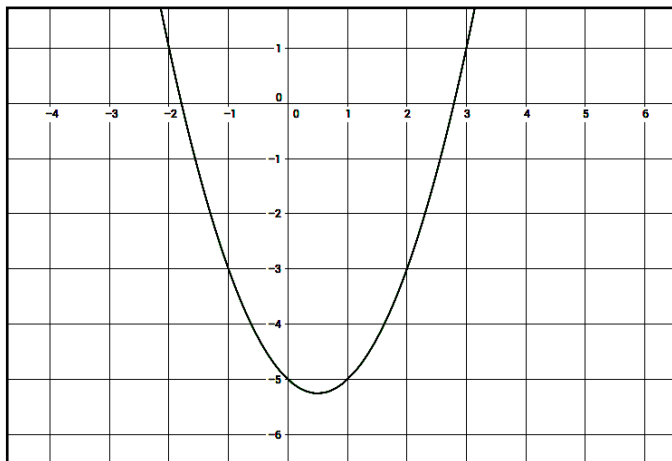
$$\begin{cases} y = (x-1)^2 + 3 \\ y = 3 \end{cases}$$



$$\begin{cases} y = (x+4)^2 - 4 \\ y = 5 \end{cases}$$



In the space below, write a linear equation that give ONE solution, TWO solutions and NO solution.



ONE SOLUTION

$$\begin{cases} y = x^2 - x - 5 \\ y = \underline{\hspace{2cm}} \end{cases}$$

TWO SOLUTIONS

$$\begin{cases} y = x^2 - x - 5 \\ y = \underline{\hspace{2cm}} \end{cases}$$

NO SOLUTIONS

$$\begin{cases} y = x^2 - x - 5 \\ y = \underline{\hspace{2cm}} \end{cases}$$

Two Hamster Commandos have located the Evil Acorn Thief's hideout. Their plan is to blowup the hideout using explosive pinecones. A hamster on the ground lobs an explosive pinecone in the path $y = -x^2 + 8x$ where "y" is vertical feet and "x" is horizontal feet. A hamster in a tree fires a pinecone explosive in the path $y = -2x + 16$ where "y" is vertical feet and "x" is horizontal feet. That said, answer the following....

- Do both Commando Hamsters score a hit on the hideout? Defend mathematically.
- Is it possible the explosives collide with each other prior to reaching the hideout? Why?
- If there is 10 foot tree from where the explosives were launched, could one of the explosive hit it instead of the hideout?

