

Investigation

Linear Quadratic Systems

Name _____

Do all linear quadratic systems have two solutions?

Do all linear quadratic systems have a solution?



Let's investigate and find the answers to these questions.

Solve the following linear quadratic systems graphically. Indicate the points of intersection on the graphs.

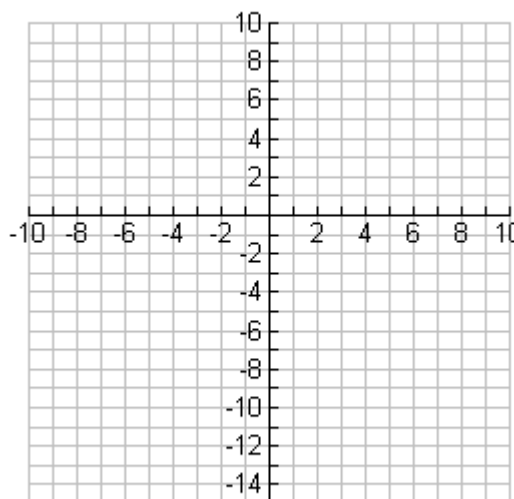
Investigation #1:

Solve this system of equations:

$$y = x^2 - x - 12$$

$$y = x + 3$$

Observations:



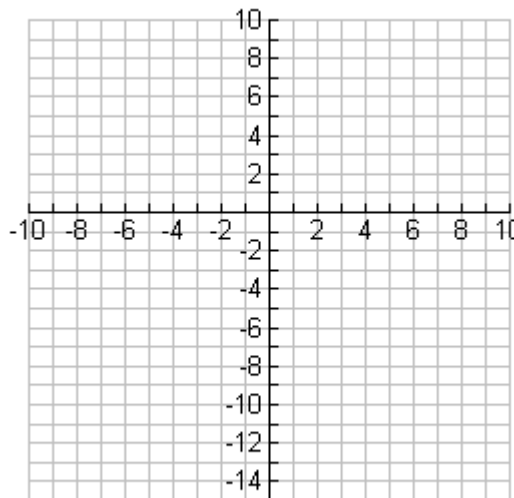
Investigation #2:

Solve this system of equations:

$$y = x^2 - 3x - 4$$

$$y = x - 8$$

Observations:



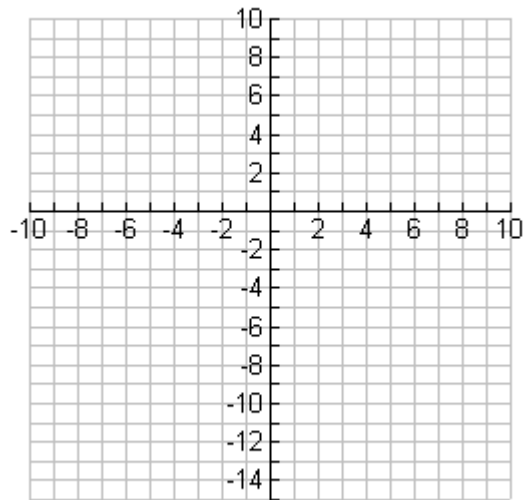
Investigation #3:

Solve this system of equations:

$$y = x^2 - x - 6$$

$$y = x - 10$$

Observations:



Answer our original questions:

Do all linear quadratic systems have two solutions? _____

Do all linear quadratic systems have a solution? _____