Chapter 8: System of Equations

8.1 Solving Systems of Equations Graphically

Warm Up:

Solve System of Linear Equations Graphically.

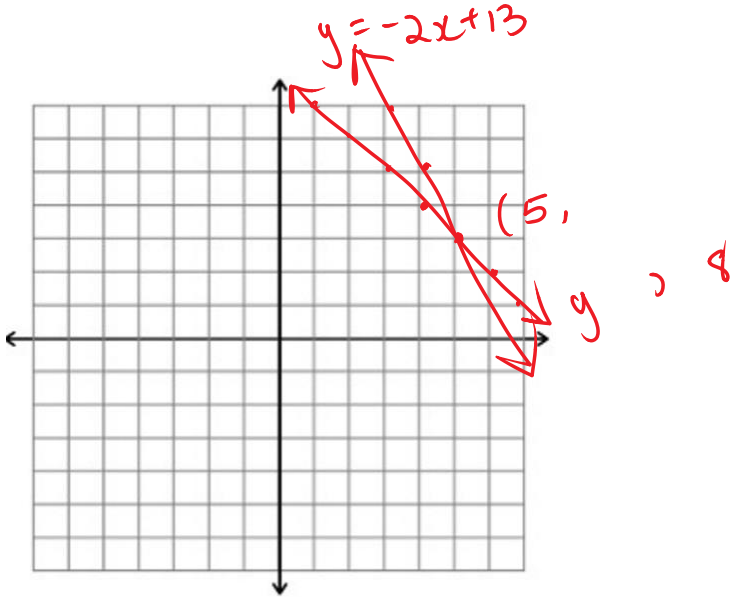
$2x + y = 13$

$x + y = 8$

$y_1 = -2x + 13$

$y_2 = -x + 8$

$(5, 3)$



System of Linear-Quadratic Equations

- a linear eq$^{\underline{n}}$ and a quad. eq$^{\underline{n}}$ involving the same variables.
- a graph involves a line and a parabola

System of Quadratic-Quadratic Equations

- two quadratic eq$^{\underline{n}}$ involving the same variables.
- the graph involves two parabolas

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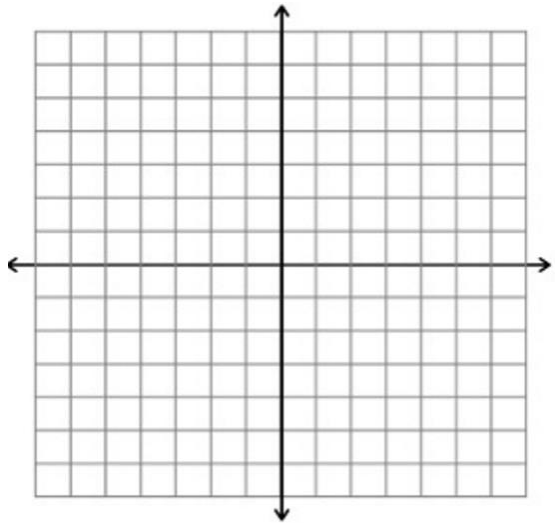
Solve the system graphically and verify your solution.

$x - y - 1 = 0$

$x^2 - 6x + y + 3 = 0$

$x - 1 = y$

$y = -x^2 + 6x - 3$



$$\begin{cases} y_1 = x - 1 \\ y_2 = -x^2 + 6x - 3 \end{cases}$$

$(0.44, -0.56)$

$(4.56, 3.56)$

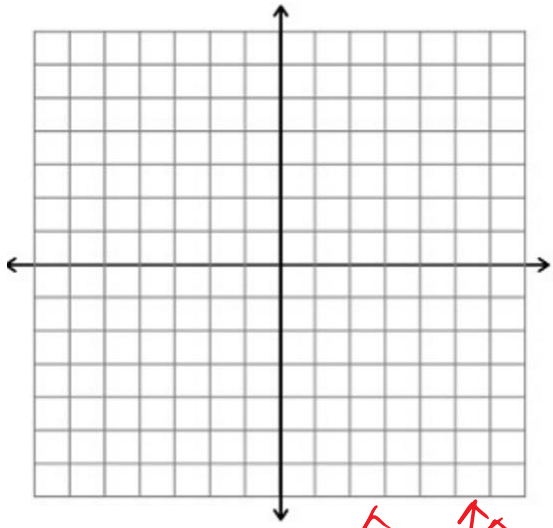
Solve the system graphically and verify your solution.

$2x^2 + 16x + y = -26$

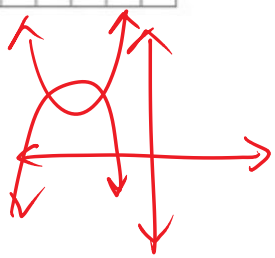
$x^2 + 8x - y = -19$

$y_1 = -2x^2 - 16x - 26$

$y_2 = x^2 + 8x + 19$



$(-5, 4)$ and $(-3, 4)$



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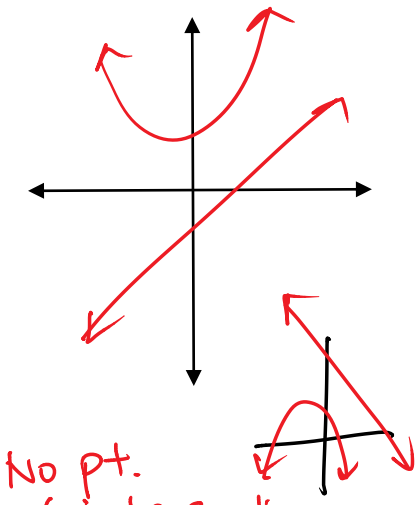
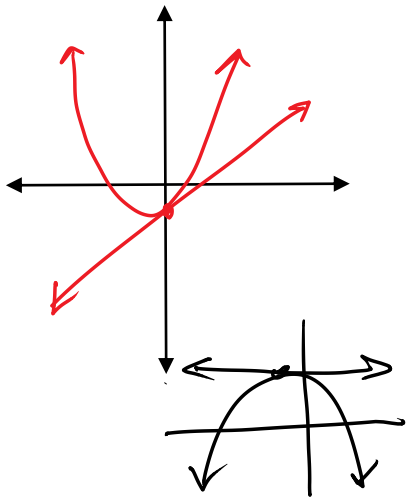
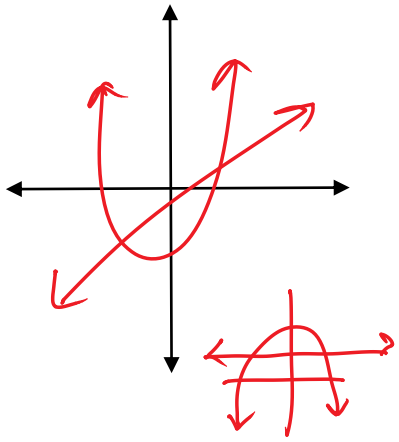
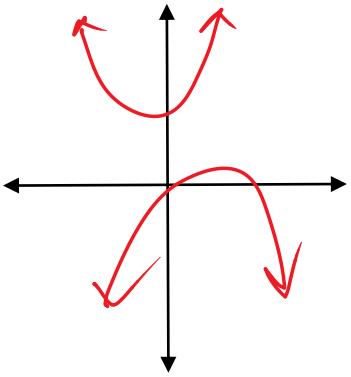
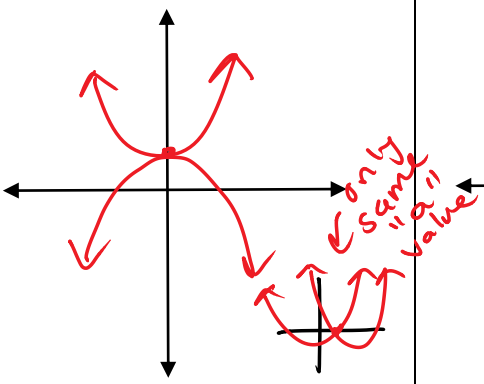
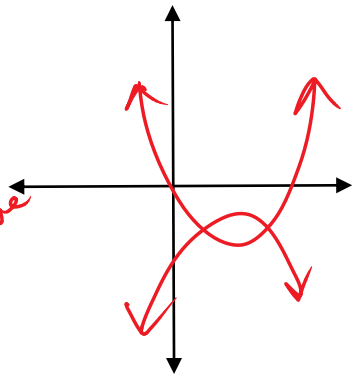
No Solution	One Solution	Two Solutions
 No pt. of intersection ∴ No sol$^{\underline{n}}$	 1 pt. of intersection ∴ 1 sol$^{\underline{n}}$	 2 pts. of intersection ∴ 2 sol$^{\underline{n}}$
 No pt. of int. ∴ No sol$^{\underline{n}}$	 1 pt. of intersection ∴ 1 sol$^{\underline{n}}$	 2 pts. of int. ∴ 2 sol$^{\underline{n}}$

Homework – sketch the graph to show your work.

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#1-3

#4 (b, d), 5 (b, e), 7, 8, 10, 11, 13, 17, 20 (pick three - your choice)