PreCalculus 11 Name_____
Date_____

8.1 Systems of Equations – Graphical Solutions

Remember, a ***system of equations*** means 2 or more eq^n's at the same time.

We will be dealing with 2 variables and 2 equations.

The ***solution*** to a system is simply the intersection of the 2 graphs.

If an (x , y) point is a solution to the system, it must satisfy both equations.

Example 1: Is the point (3, 1) a solution to the following system ?

$y = -2x + 7$ and $y = (x + 2)^2 - 10$

sub in (3, 1)

$1 = -2(3) + 7$

$1 = -6 + 7$

$1 = 1$ ✓

$1 = (3+2)^2 - 10$

$1 = 25 - 10$

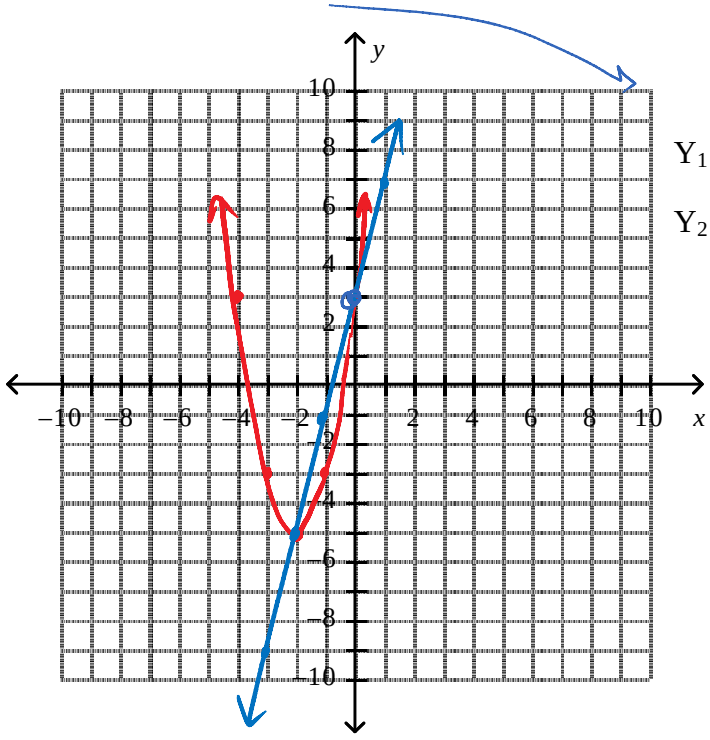
$1 = 15$

×

Not the sol^n

Example 2: p. 428 - Solve the ***Linear-Quadratic*** system graphically

$4x - y + 3 = 0$ and $2x^2 + 8x - y + 3 = 0$



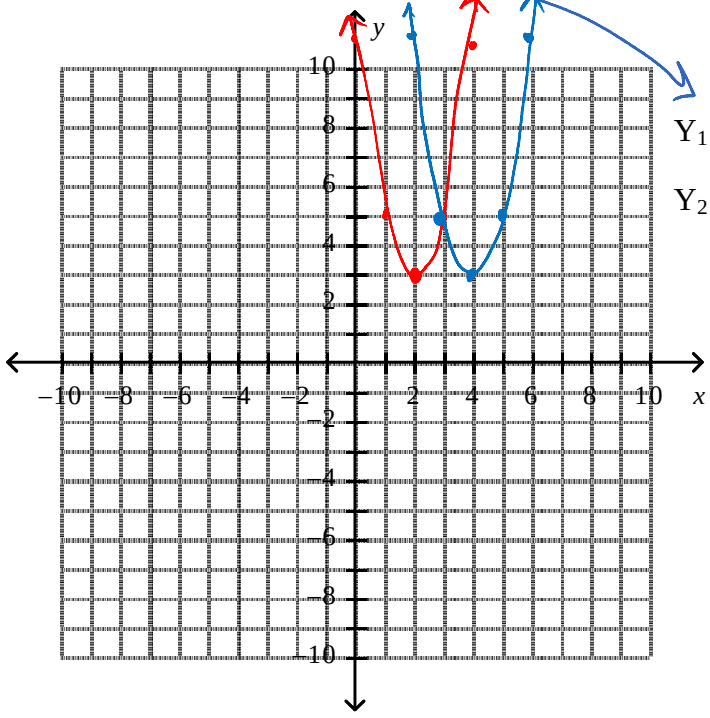
$Y_1 = 4x + 3$

$Y_2 = 2x^2 + 8x + 3$

Answer: (0, 3) (−2, −5)

Example 3: p. 428 - Solve the ***Quadratic-Quadratic*** system graphically

a) $2x^2 - 16x - y = -35$ and $2x^2 - 8x - y = -11$



$Y_1 = 2x^2 - 16x + 35$

$Y_2 = 2x^2 - 8x + 11$

Answer: $(3, 5)$

b) verify your solution.

$y = 2x^2 - 16x + 35$

$5 = 2(3)^2 - 16(3) + 35$

$5 = 18 - 48 + 35$

$5 = 53 - 48$

$5 = 5$ ✓

$y = 2x^2 - 8x + 11$

$5 = 2(3)^2 - 8(3) + 11$

$5 = 18 - 24 + 11$

$5 = 29 - 24$

$5 = 5$ ✓

Assignment: p. 435 # 2 – 4, 6-8