

Unit 2B Day 4 HW

Name: _____

Solve the following graphically or algebraically

1. Solve the following system algebraically:

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

$$y = 2x$$

2. Find the solutions of the system algebraically:

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

$$x + y = 1$$

3. Solve for the solutions algebraically:

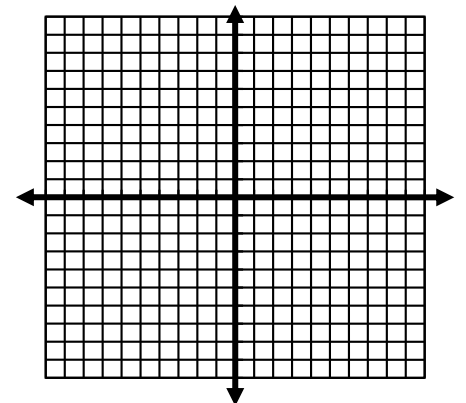
$$y = x^2 - 7x + 13$$

$$x - y = 2$$

4. Solve the following system of equations graphically and check.

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

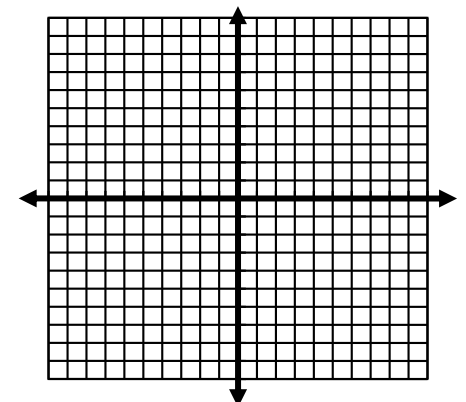
$$x + y = 1$$



5. Solve the following system of equations graphically and check.

$$y = x^2 + 4x + 4$$

$$y = -2x + 4$$



6. The graphs of the equations $y=x^2$ and $x=2$ intersect in:

- (a) 1 point (b) 2 points (c) 3 points (d) 4 points

7. Which is a solution or the following system of equations?

$$y = 2x - 15$$

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

- (a) (3, -9) (b) (0, 0) (c) (5, 5) (d) (6, 0)

8. When the graphs of the equations $y = x^2 - 5x + 6$ and $x + y = 6$ are drawn on the same set of axes, at which point do the graphs intersect?

- (a) (4, 2) (b) (5, 1) (c) (3, 3) (d) (2, 4)

9. In making business plans for a pizza sale fund raiser, the Band Boosters at Enloe High School figured out how both sales income $I(n)$ and selling expenses $E(n)$ would probably depend on number of pizzas sold n . They predicted that $I(n) = -0.05n^2 + 20n$ and $E(n) = 5n + 250$. Estimate value(s) for n for which $I(n) = E(n)$ and explain what the solution(s) of that equation tell about prospects of the pizza sale fund-raiser.

10. The stopping distance d in feet for a car traveling at a speed of s miles per hour depends on car road conditions. Here are two possible stopping distance formulas: $d = 3s$ and $d = 0.05s^2 + s$. Write and solve an equation to answer the question, "For what speed(s) do the two functions predict the same stopping distance?"

11. Given the equation $x^2 - 7x + 2 = 20 - x$

- Graph the problem. Explain how many solutions you expect to have.
- Find the solutions to this problem.

12. The price C , in dollars per share, of a high-tech stock has fluctuated over a twelve-year period according to the equation $C=14+12x - x^2$, where x is in years. The price C , in dollars per share, of a second high-tech stock has shown a steady increase during the same time period according to the relationship $C=2x+30$. For what values are the two stock prices the same?

13. **A rocket is launched from the ground and follows a parabolic path represented by the equation $y = -x^2 + 10x$. At the same time, a flare is launched from a height of 10 feet and follows a straight path represented by the equation $y = -x + 10$. Using the accompanying set of axes, graph the equations that represent the paths of the rocket and the flare, and find the coordinates of the point or points where the paths intersect.**