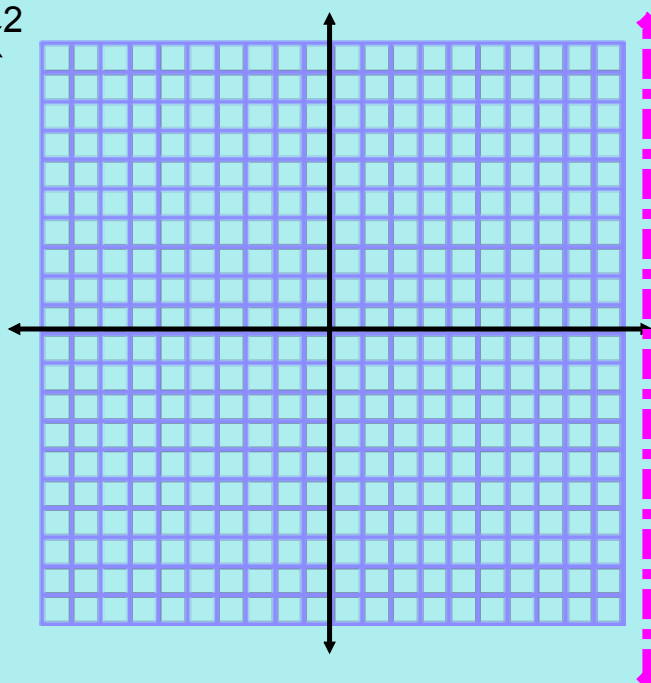


Solve by graphing and factoring:

$$6x^2 - 8x + 12 = 5 + 5x^2$$



### Group Project:

- Groups of 2 - 3 only
- Due date: end of class Friday
- **ALL** group members, please complete the rough draft in your spirals. Everyone must have each part of the project solved in their spiral, including the checks.
- I will give your group an equation. Each group will have a different equation.
- Once I have seen your rough drafts you can get a large sheet of graph paper for your final copy.
- Use colored pencils, pens or markers to show all of your work on your final copy clearly and neatly please.
- Your final copy must include your equation solved by graphing, factoring, completing the square and the Quadratic Formula (example on the next slide). You must also show your check for **ALL** of your solutions by substituting into the original equation.
- You will have this week to complete in class.

## Quadratics Project

Solve by factoring:

$$\begin{array}{r} 5n^2 - n - 30 = 4n^2 \\ -4n^2 \qquad \qquad -4n^2 \\ \hline \end{array}$$

$$\begin{aligned} n^2 - n - 30 &= 0 \\ (n - 6)(n + 5) &= 0 \end{aligned}$$

$$n = 6 \text{ or } -5$$

Solve by Completing the Square:

$$n^2 - n = 30$$

$$n^2 - n + \left(-\frac{1}{2}\right)^2 = 30 + \left(-\frac{1}{2}\right)^2$$

$$\left(n - \frac{1}{2}\right)^2 = 30 + \frac{1}{4}$$

$$\left(n - \frac{1}{2}\right)^2 = \frac{120}{4} + \frac{1}{4}$$

$$\left(n - \frac{1}{2}\right)^2 = \frac{121}{4}$$

$$\sqrt{\left(n - \frac{1}{2}\right)^2} = \sqrt{\frac{121}{4}}$$

$$n - \frac{1}{2} = \pm \frac{11}{2}$$

$$\begin{aligned} n &= \frac{11}{2} + \frac{1}{2} \\ \text{or } n &= -\frac{11}{2} + \frac{1}{2} \end{aligned}$$

$$n = \frac{12}{2} \text{ or } -\frac{10}{2}$$

$$n = 6 \text{ or } -5$$

Solve by graphing:

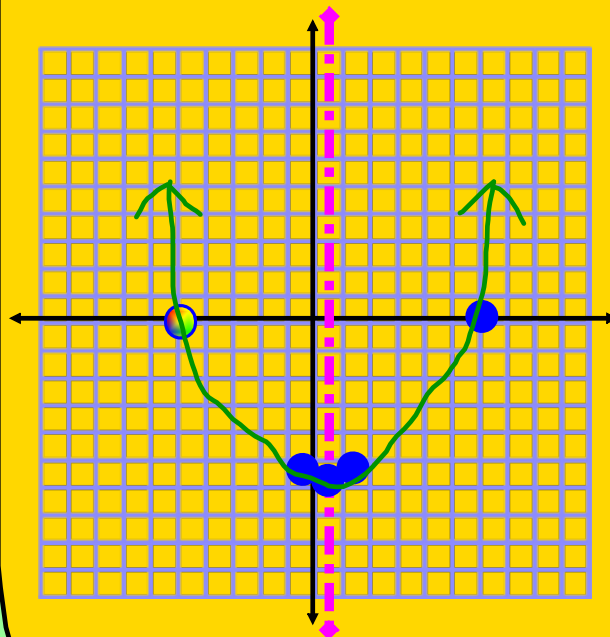
$$n^2 - n - 30 = 0$$

$$\begin{aligned} \text{AOS: } x &= \frac{-1}{2(1)} \\ x &= \frac{1}{2} \end{aligned}$$

$$\text{vertex: } \left(\frac{1}{2}, -\frac{121}{4}\right)$$

$$\text{y-intercept: } (0, -30)$$

$$\text{x-intercepts: } (6, 0) \text{ \& } (-5, 0)$$



\*x-axis numbered by 1's and y-axis numbered by 5's

Solve by Quadratic Formula:

$$a = 1, b = -1, c = -30$$

$$x = \frac{-(-1) \pm \sqrt{(-1)^2 - 4(1)(-30)}}{2(1)}$$

\*show your steps to solve!!!

$$x = 6 \text{ or } -5$$