

# Systems of equations: Project

Alg2H

# Requirements

- Describe a system with two equations
  - Using word problem
  - Picture
  - Poem
  - Other !
- Solution of the system
  - You will need to attach a 'show-your-work' on paper, scanned to submit in schoology.
- Challenge (small)
  - With solution in the attached show-your-work part.
- (extra credit) Special cases.
- Presentation in class - 4 to 5 minutes.
- Work in pairs (or individual), presenting in a week.

**Any of the below can be done with systems of Inequalities!**



# You WILL need to submit your work.

- Solving the equations.
- Checking your results (plugging in).
- Each person in the team submits a self-written version of ‘show your work’, and (the same) copy of the slides.
  - Slides in Powerpoint format or PDF.
  - NO links to google-drive etc.
- Submit on schoology BEFORE the presentation in class:
  - Presentation file.
  - Show-your-work.

# Extra credit: Special cases

- Demonstrate briefly one of the special cases, preferably related to the problem you phrased:
  - Parallel lines - No solution.

OR

  - Same line - infinite number of solutions.
- Need to be in the presentation (short, one slide) and in the show-your-work (in detail).



# 1-Point perspective

Alg2H: (Sample) Systems of Equations project

John Smith and Jane Doe

Oct-26-2016

# Phrasing the problem

## 1-point perspective

What is the location of the 1-point perspective?



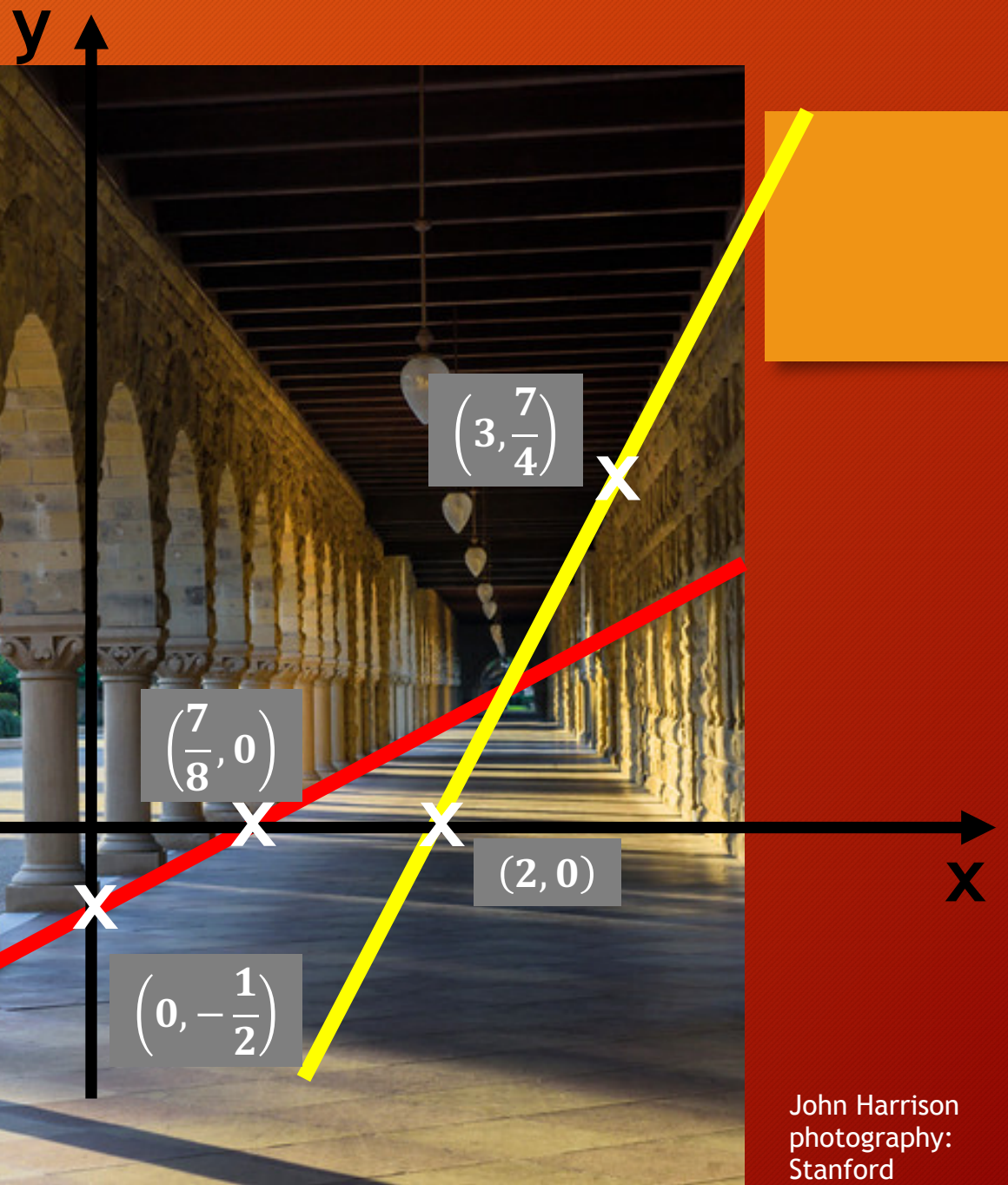
John Harrison  
photography:  
Stanford



# Setting up the solution

Two lines, Two points for each  
==> Calculate the equation for each line

$$\begin{cases} y = \frac{4}{7}x - \frac{1}{2} & \text{Red line} \\ y = \frac{7}{4}x - \frac{14}{4} & \text{Yellow line} \end{cases}$$



John Harrison  
photography:  
Stanford

# System of equations

$$\begin{cases} y = \frac{4}{7}x - \frac{1}{2} & \text{Red line} \\ y = \frac{7}{4}x - \frac{14}{4} & \text{Yellow line} \end{cases}$$

$$\text{Solution } (x, y) = \left(2\frac{6}{11}, \frac{21}{22}\right)$$



# Solution

$$\left(2\frac{6}{11}, \frac{21}{22}\right)$$

$$\left(3, \frac{7}{4}\right)$$

$$\left(\frac{7}{8}, 0\right)$$

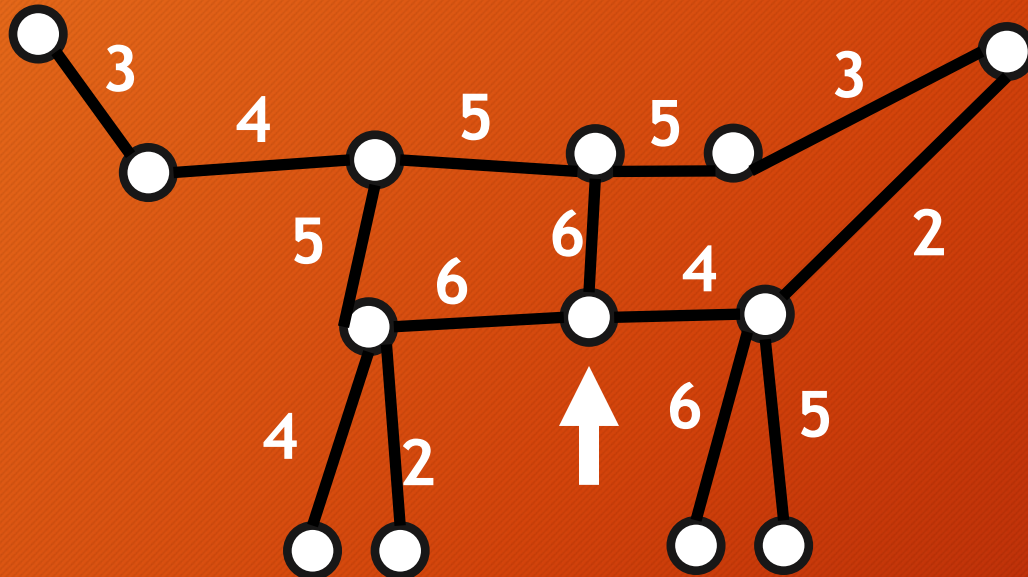
$$(2, 0)$$

$$\left(0, -\frac{1}{2}\right)$$



# Challenge (small)

Behind each node a mystery number is hidden. The edges describe the sum of the two adjacent mystery numbers. Find the mystery number behind the node marked with an arrow.





# Extra credit: Parallel lines



You can add the solution here, or any other indicative detail.

John Harrison  
photography:  
Stanford

# End

(Almost: Rubric to come)



# Rubric: 20 points (+2 extra credit)

	Included in	Points	Needs work	Meets expectation	Exceeds expectation
Stating the problem	Presentation	4	Not clear. Doesn't make real-world sense.		Clear. Leads directly to system of equations.
Solving the problem	(In the show-your-work)	8	Inaccurate. No checking of results.	Accurate. Used two methods.	Used three methods (Graphic, Algebraic, Cramer).
Presenting	Presentation / in-class (4 to 5 minutes)	4	Too short/ Too long. Contains inaccuracies.		On time. Clear and concise and correct.
Challenge problem	Presentation +show-your-work	4	Small variation off. Not engaging.		Original. Interesting.
<b>Extra credit:</b> Demonstrate related special case	Presentation +show-your-work	2	Inaccurate. No checking of results.	Accurate. Used two methods.	Used three methods (Graphic, Algebraic, Cramer).

# End

(Backup slides: How I measured+options)



# Phrasing the problem 1-point perspective



John Harrison  
photography:  
Stanford







