

3.1 Using Graphs & Tables to Solve Linear Systems

CA #2


9/20/2010

Vocab.

System of equations

ex: $y = 3x + 5$
 $y = 4x + 2$

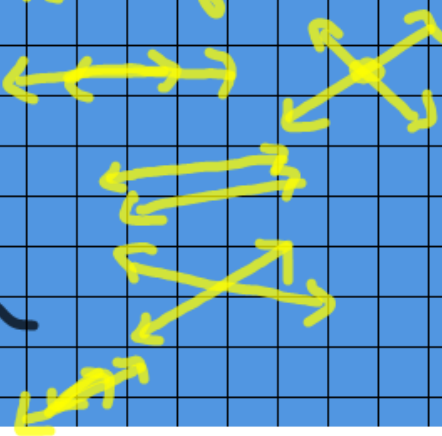
linear system - system of...

consistent system - 

inconsistent system

independent system

dependent system



Ex. 1A $\underline{\underline{\begin{pmatrix} x & y \\ 2 & 4 \end{pmatrix}}}$; $\left\{ \begin{array}{l} \underline{x - 2y = -6} \\ \underline{2x + y = 8} \end{array} \right.$

Solution

$$2 - 2(4) \stackrel{?}{=} -6$$

$$2 - 8 = -6$$

$$-6 = -6 \quad \checkmark$$

$$2(2) + 4 \stackrel{?}{=} 8$$

$$8 = 8 \quad \checkmark$$

Ex. 1B

$$(3, 2); \begin{cases} \underline{2x + 3y = 12} \\ \underline{8x - 6y = 24} \end{cases}$$

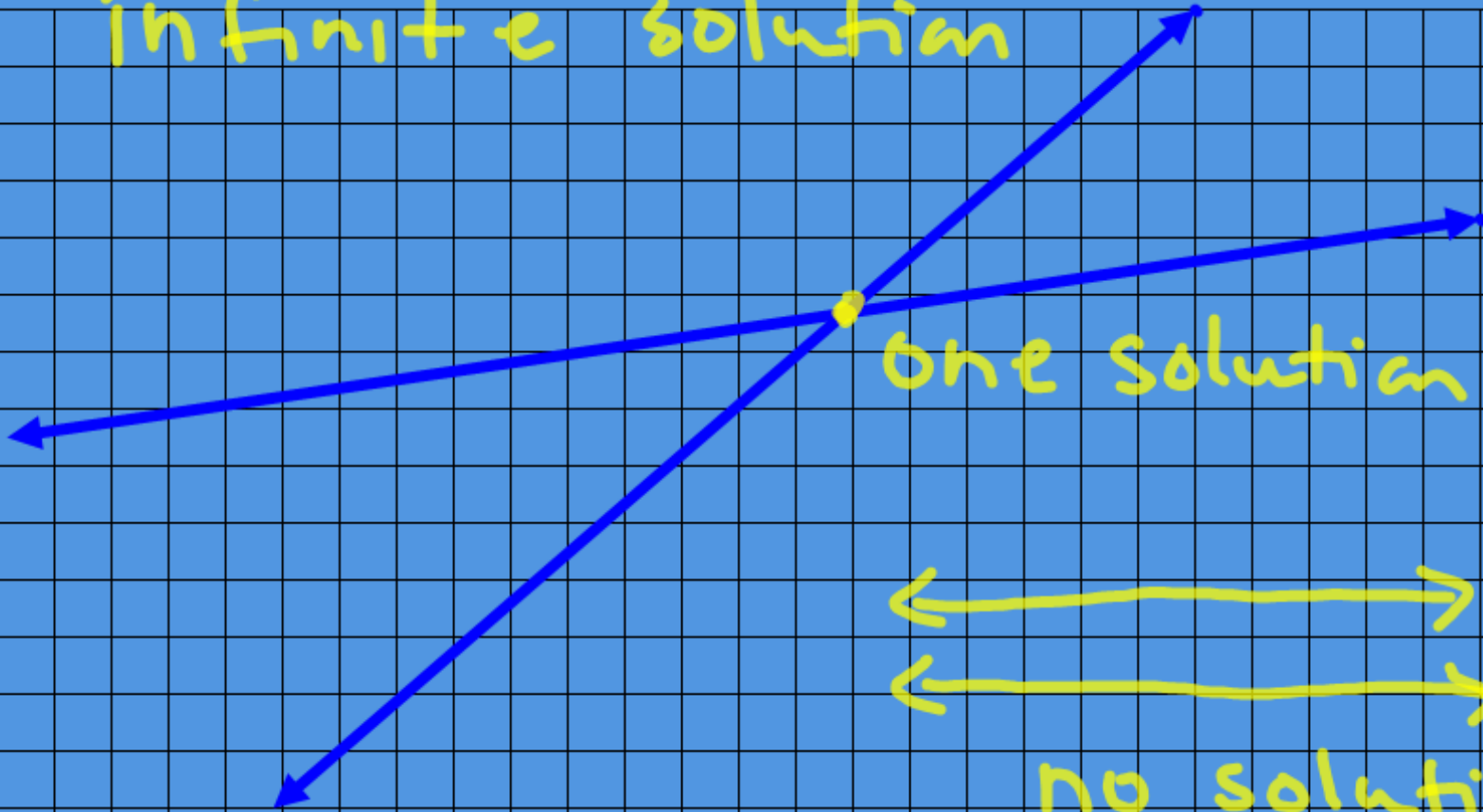
$$\begin{array}{r} 2(3) + 3(2) = 12 \\ 6 + 6 = 12 \quad \checkmark \end{array}$$

$$\begin{array}{r} 8(3) - 6(2) = 24 \\ 24 - 12 \neq 24 \end{array}$$

Not a
Solution



infinite solution



one solution

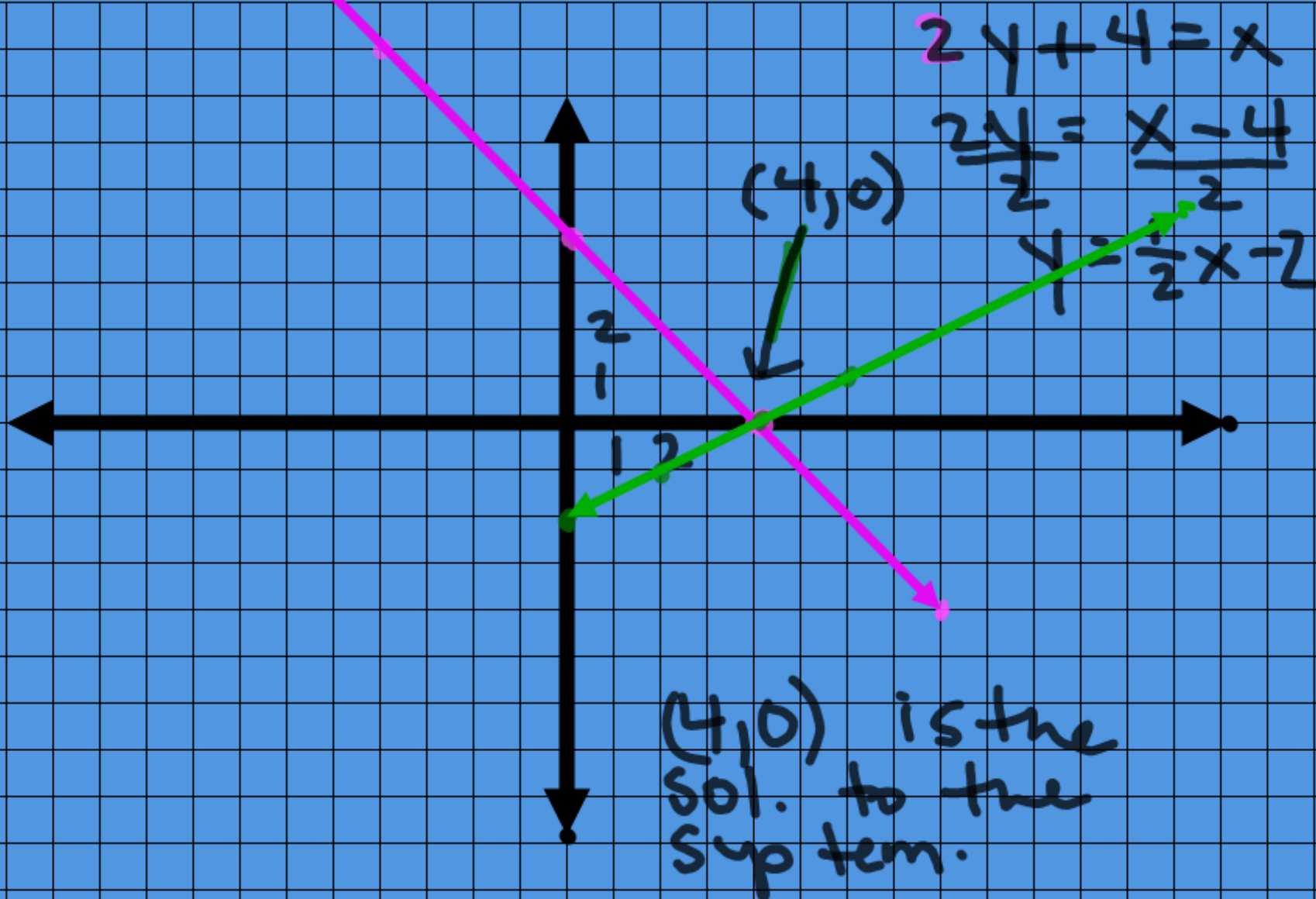


no solution

Ex. 2

$$\begin{cases} \underline{x + y = 4} \\ \underline{2y + 4 = x} \end{cases}$$

$$\begin{matrix} x_{int} = 4 \\ y_{int} = 4 \end{matrix}$$



Graphing Calculator - Windows Internet Explorer

http://my.hrw.com/math06_07/nsmedia/tools/Graph_Calculator/graphCalc.html

File Edit View Favorites Tools Help

Favorites Suggested Sites Free Hotmail Web Slice Gallery Aeries Browser Interface Aeries Browser Interface by... Aeries Browser Interface by...

Graphing Calculator

Graphing Calculator

Equations Settings Intersection Plot Points

$y_1 = 3x + 2$
 $y_2 = x + 4$
 $y_3 =$
 $y_4 =$

Deg
 Rad

/ x π sin e
 * x^2 x^3 cos ln
 - \wedge $\sqrt{\quad}$ tan log
 + () abs

GRAPH ZOOM IN ZOOM OUT

TRACE

x	y

Done Internet 100%

Handwritten work on the calculator screen:

$$3x - y = -2$$

$$\begin{array}{r} -3x \\ \hline -y = -3x - 2 \\ \hline y = 3x + 2 \end{array}$$

$$x - y = -4$$

$$\begin{array}{r} -y = -x - 4 \\ \hline y = x + 4 \end{array}$$

Graphing Calculator - Windows Internet Explorer

http://my.hrw.com/math06_07/nsmedia/tools/Graph_Calculator/graphCalc.html

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Graphing Calculator

Graphing Calculator

Equations Settings Intersection Plot Points

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GRAPH ZOOM IN ZOOM OUT
 TRACE

x	y
-5	-1
-4	0
-3	1
-2	2
-1	3
0	4
1	5
2	6
3	7
	8

(1,5) is the solution to the system.

Done Internet 100%

Classify:
 one sol.
 inf. sol.
 no sol.

Ex.3 A

$$\begin{cases} 2x + y = 3 \\ 6x = 9 - 3y \end{cases}$$

$$y = mx + b$$

$$2x + y = 3$$

$$y = -2x + 3$$

$$6x = 9 - 3y$$

$$\begin{array}{r} 6x = 9 - 3y \\ +3y \quad +3y \\ \hline 3y + 6x = 9 \\ -6x \quad -6x \\ \hline \end{array}$$

$$\frac{3y}{3} = \frac{-6x + 9}{3}$$

$$y = -2x + 3$$

Infinite sol.



Ex.3B

$$3x + y = 3$$

$$2 + y = -3x$$

$$\begin{array}{r} 3x + y = 3 \\ -3x \quad -3x \\ \hline y = -3x + 3 \end{array}$$

$$y = -3x + 3$$

Will

$$y = mx + b$$

no solution

$$\begin{array}{r} 2 + y = -3x \\ -2 \quad -2 \\ \hline y = -3x - 2 \end{array}$$

$$y = -3x - 2$$

Robbo



Big Dog

\$15 equip
\$35/hr lessons

1hr.	2hrs
\$50	\$85

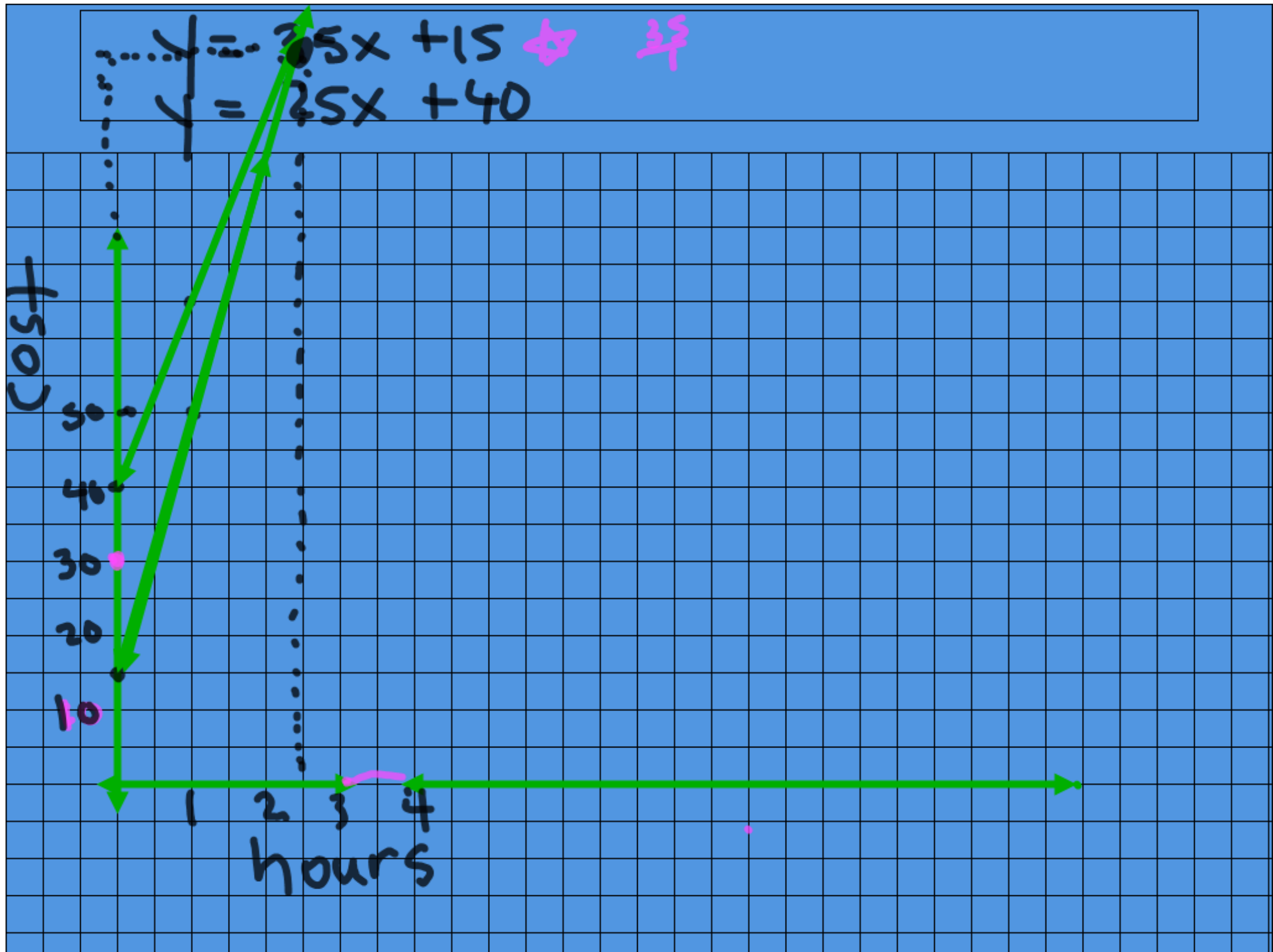
$$y = 35x + 15$$

Halt pipe

\$40 equip rental
\$25/hr lesson.

1hr	2hrs.
\$65	\$90

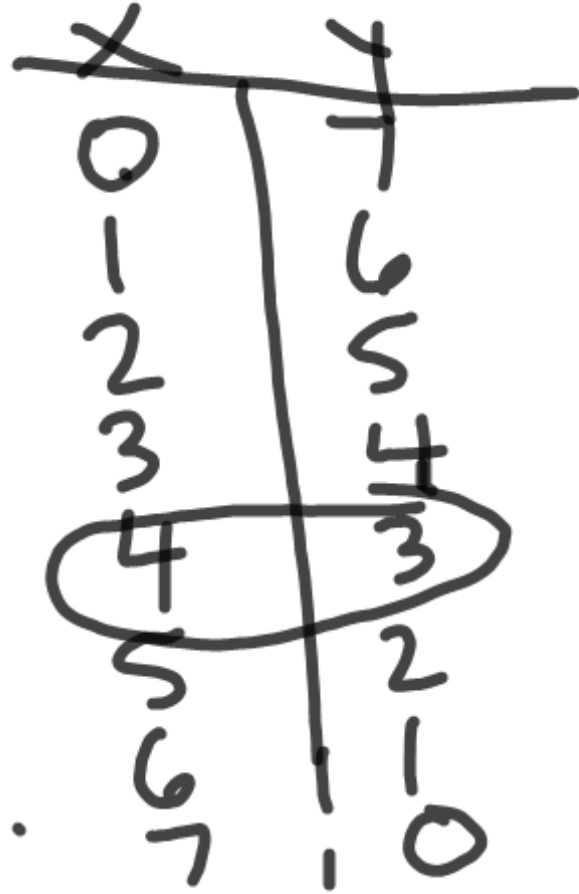
$$y = 25x + 40$$



#17

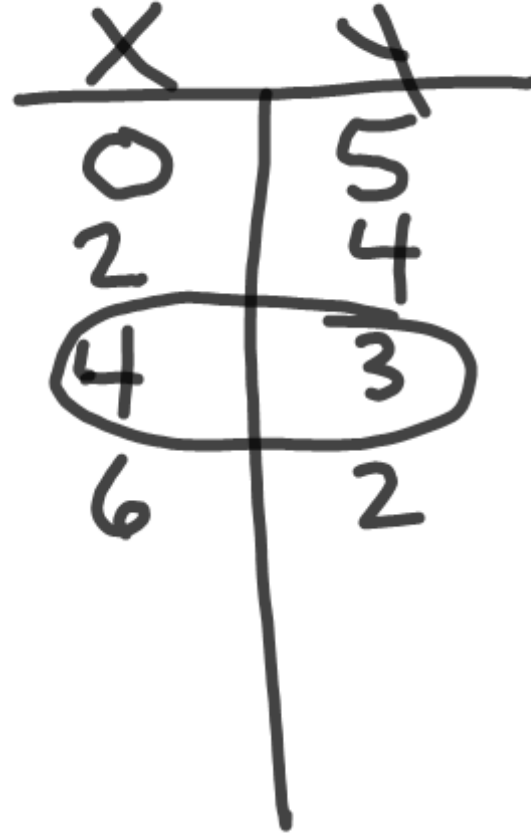
Ag 7

$$Y = 7 - X$$



ag 2

$$Y = 5 - .5X$$



P 186 # 15-31 ODD