Inspiring Greatness
INDEPENDENCE SCHOOL DISTRICT

Math Virtual Learning

Algebra 1 S1

Graphing system of linear equations that coincide

April 29, 2020

Algebra I S1

Lesson: [April 29, 2020]

Objective/Learning Target:

Students can determine if two lines coincide when graphed and that a system of lines that coincide have infinite solutions.

BELL RINGER

1) If a line has a slope of $-\frac{2}{9}$, what is the slope of a line perpendicular to it?

A) $-\frac{2}{9}$

B) $\frac{2}{9}$

C) $-\frac{9}{2}$

D) $\frac{9}{2}$

BELL RINGER

A) $-\frac{2}{9}$

Incorrect. This is the same slope as the original line. Perpendicular lines have opposite reciprocal slopes. The correct answer is $\frac{9}{2}$.

B) $\frac{2}{9}$

Incorrect. Perpendicular lines have opposite reciprocal slopes. This slope is the opposite but not the opposite reciprocal. The correct answer is $\frac{9}{2}$.

C) $-\frac{9}{2}$

Incorrect. Perpendicular lines have opposite reciprocal slopes. This slope is the reciprocal but not the opposite reciprocal. The correct answer is $\frac{9}{2}$.

D) $\frac{9}{2}$

Correct. Perpendicular lines have opposite reciprocal slopes. $\frac{9}{2}$ is the opposite reciprocal of $-\frac{2}{9}$.

BELL RINGER

2) Which of the following lines are perpendicular to the line $y = 7x + \frac{2}{3}$?

$y = -\frac{1}{7}x$

$y = -\frac{1}{7}x - 12$

$y = \frac{1}{7}x - \frac{3}{2}$

$y = -7x + \frac{3}{2}$

A) $y = -\frac{1}{7}x$ and $y = -\frac{1}{7}x - 12$

B) $y = -\frac{1}{7}x - 12$ and $y = \frac{1}{7}x - \frac{3}{2}$

C) $y = -7x + \frac{3}{2}$

D) all of the lines are perpendicular

BELL RINGER-Answer

2)

A) $y = -\frac{1}{7}x$ and $y = -\frac{1}{7}x - 12$

LINES THAT COINCIDE

VIDEO: CONSISTENT AND DEPENDENT

https://www.youtube.com/watch?v=EmuhDYn3D3g

VIDEO: Solve a Linear System of Equations by Graphing (Infinite Solutions)

https://www.youtube.com/watch?v=HjE8CJaHrh0

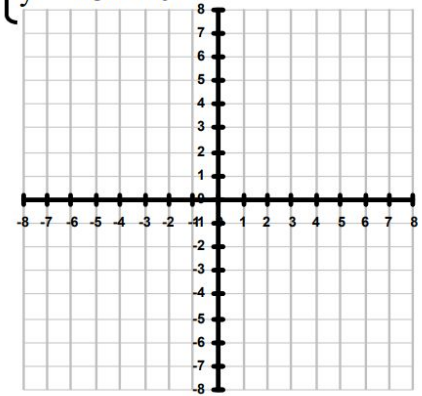
PRACTICE PROBLEMS (1-3)

Name _____

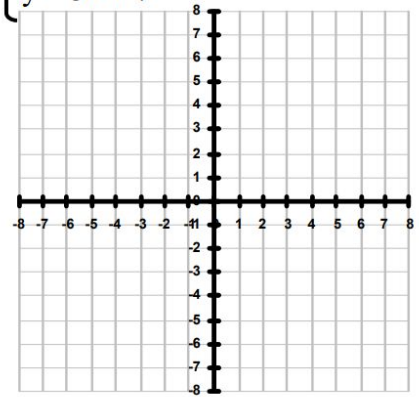
GRAPHING SYSTEMS OF EQUATIONS #2

Directions: Find the solution for each system of equations by graphing the system. The solution is where the graphs intersect. Write the solution as an ordered pair in the space provided.

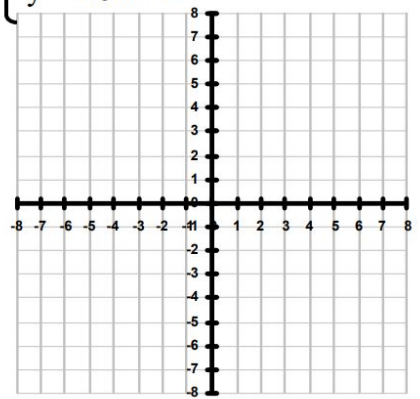
1) $\begin{cases} y = -1/2x + 1 \\ y = 1/3x + 6 \end{cases}$ **Solution (_____)**



2) $\begin{cases} y = -2x - 3 \\ y = 3x + 7 \end{cases}$ **Solution (_____)**

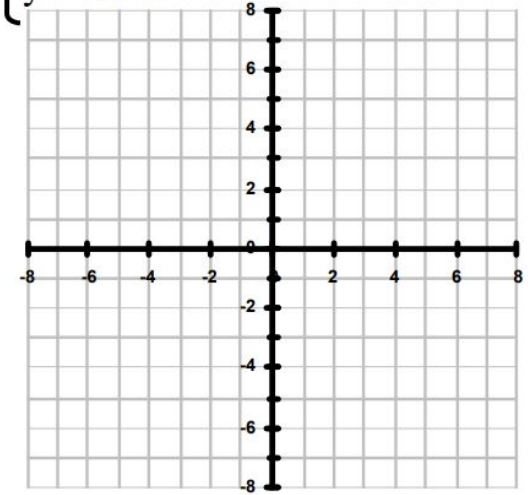


3) $\begin{cases} y = 2x - 7 \\ y = 1/5x + 2 \end{cases}$ **Solution (_____)**

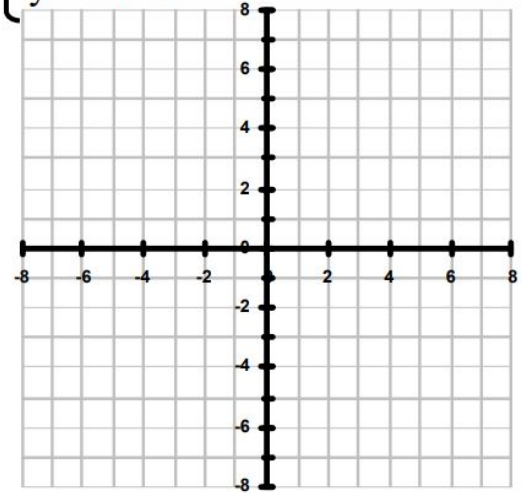


PRACTICE PROBLEMS (4-6)

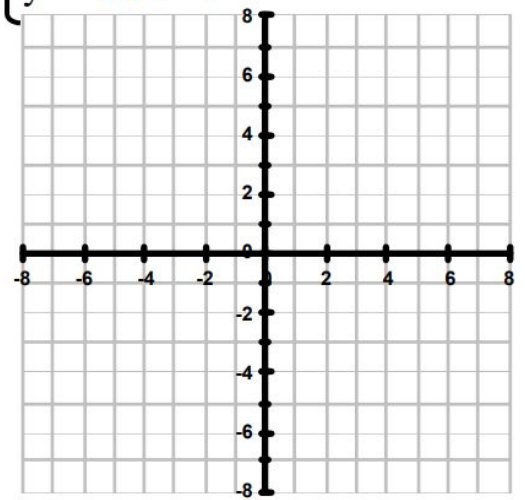
4) $\begin{cases} y = -x - 3 \\ y = -x - 5 \end{cases}$ **Solution (_____)**



5) $\begin{cases} y = x + 6 \\ y = -x - 2 \end{cases}$ **Solution (_____)**

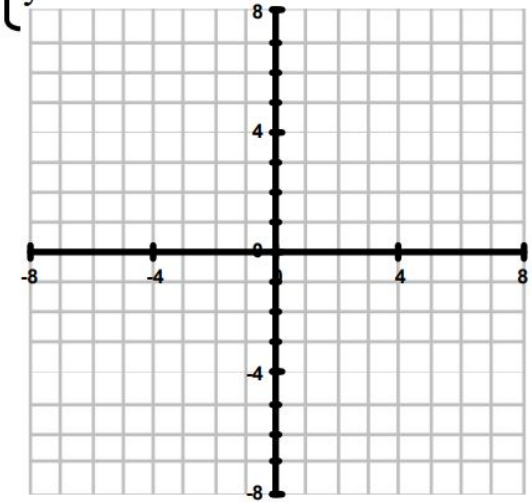


6) $\begin{cases} y = 1/3x - 1 \\ y = -5/3x - 7 \end{cases}$ **Solution (_____)**

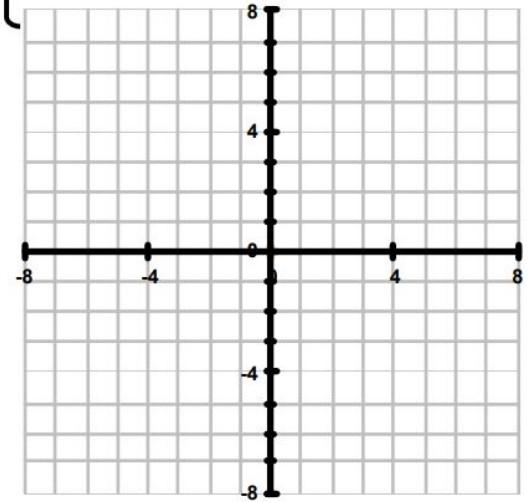


PRACTICE PROBLEMS (7-9)

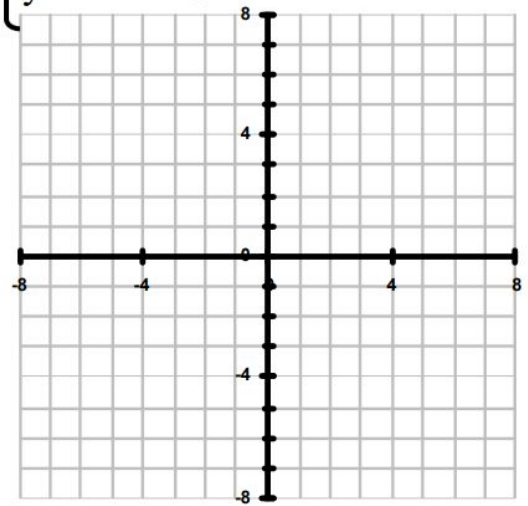
7) $\begin{cases} y = -2x + 4 \\ y = -2x + 4 \end{cases}$ **Solution (_____)**



8) $\begin{cases} y = x + 3 \\ x = 2 \end{cases}$ **Solution (_____)**

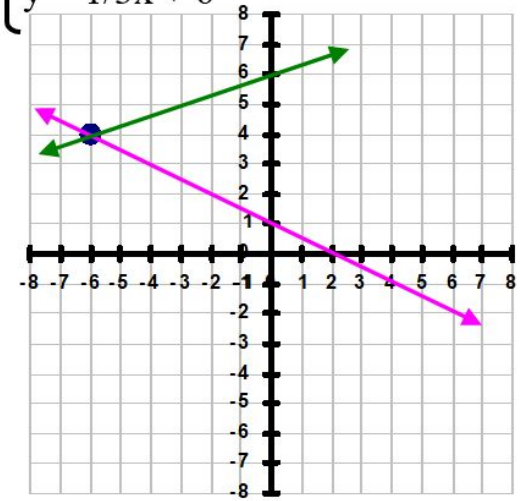


9) $\begin{cases} y = 5/2x + 2 \\ y = 1/2x - 6 \end{cases}$ **Solution (_____)**

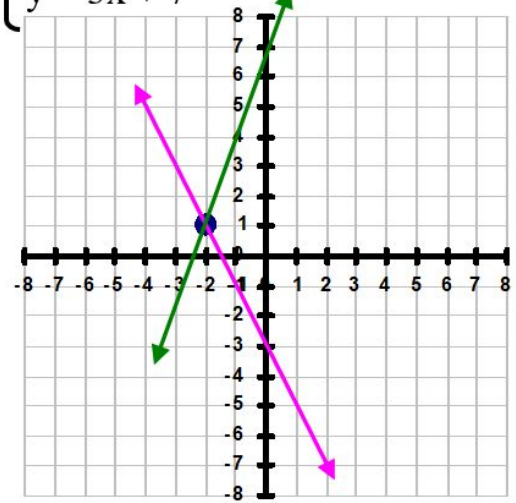


PRACTICE PROBLEMS (1-3) SOLUTIONS

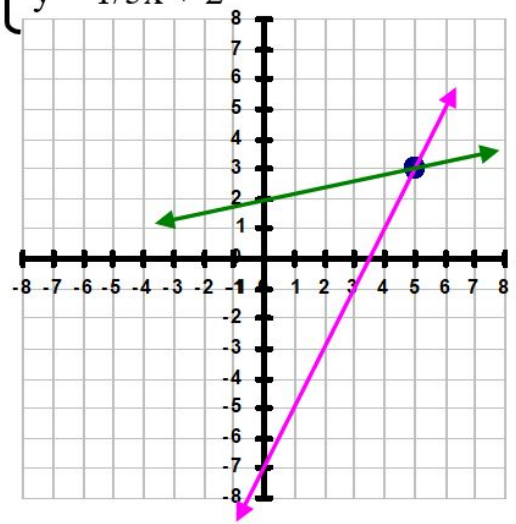
1) $\begin{cases} y = -1/2x + 1 \\ y = 1/3x + 6 \end{cases}$ **Solution (-6, 4)**



2) $\begin{cases} y = -2x - 3 \\ y = 3x + 7 \end{cases}$ **Solution (-2, 1)**

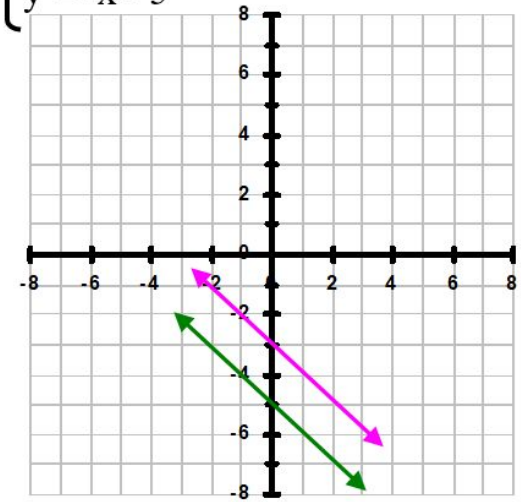


3) $\begin{cases} y = 2x - 7 \\ y = 1/5x + 2 \end{cases}$ **Solution (5, 3)**

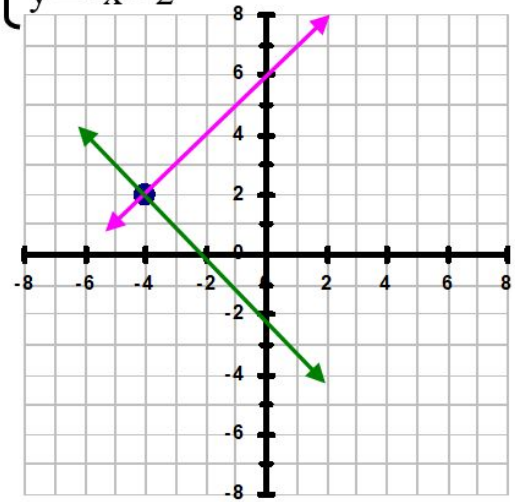


PRACTICE PROBLEMS (4-6) SOLUTIONS

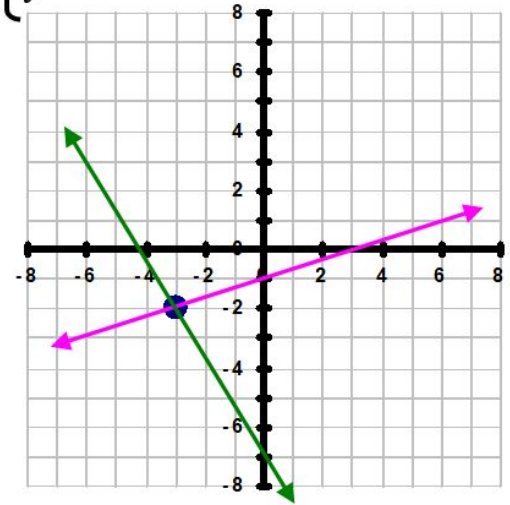
4) $\begin{cases} y = -x - 3 \\ y = -x - 5 \end{cases}$ **No Solution**



5) $\begin{cases} y = x + 6 \\ y = -x - 2 \end{cases}$ **Solution (-4, 2)**

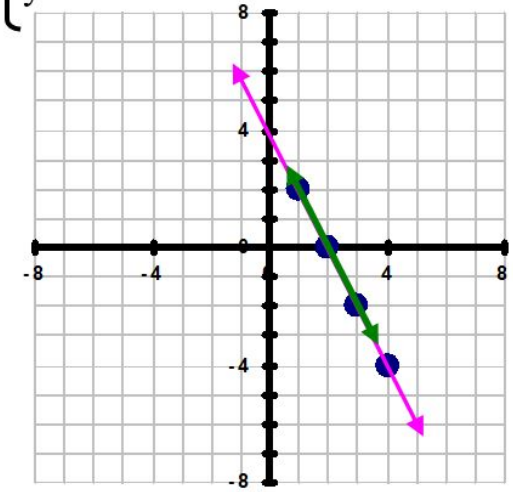


6) $\begin{cases} y = 1/3x - 1 \\ y = -5/3x - 7 \end{cases}$ **Solution (-3, -2)**

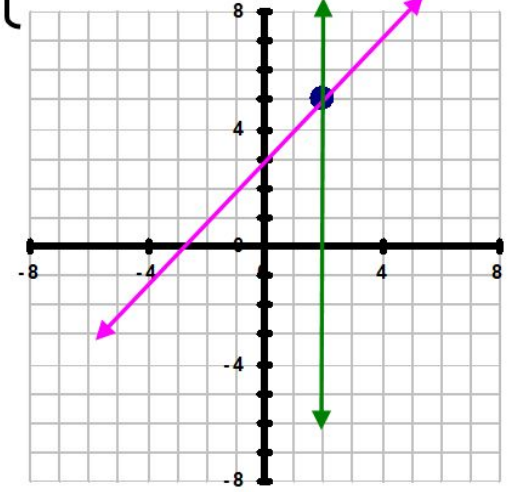


PRACTICE PROBLEMS (7-9) SOLUTIONS

7) $\begin{cases} y = -2x + 4 \\ y = -2x + 4 \end{cases}$ **Solution (4, -4)**



8) $\begin{cases} y = x + 3 \\ x = 2 \end{cases}$ **Solution (2, 5)**



9) $\begin{cases} y = 5/2x + 2 \\ y = 1/2x - 6 \end{cases}$ **Solution (-4, -8)**