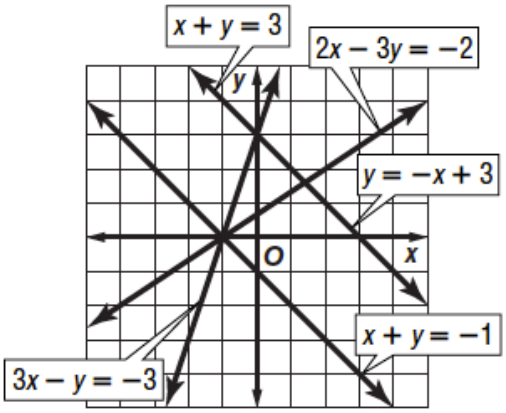
Algebra I
Chapter 7 Review

How many solutions exist for each system of equations?

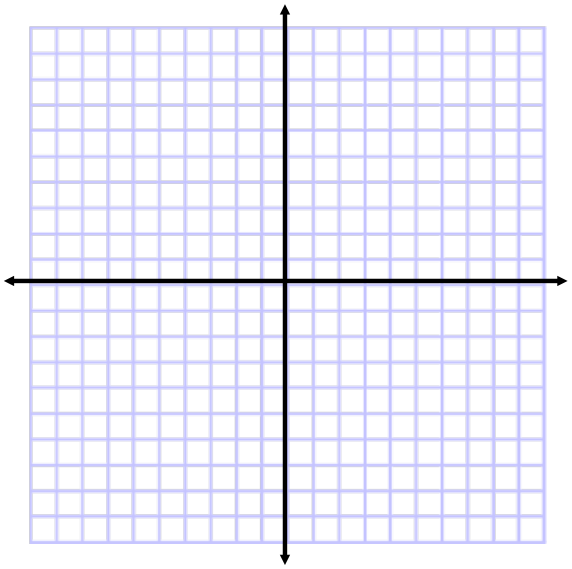
$x + y = 3$
$y = -x + 3$

$3x - y = -3$
$2x - 3y = -2$

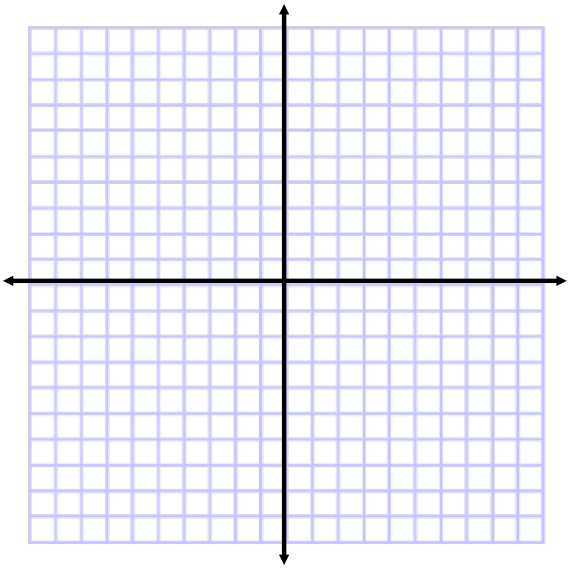


Graph each system of equations. Then determine whether the system has no solution, one solution, or infinitely manny solutions. If the system has one solution, name it.

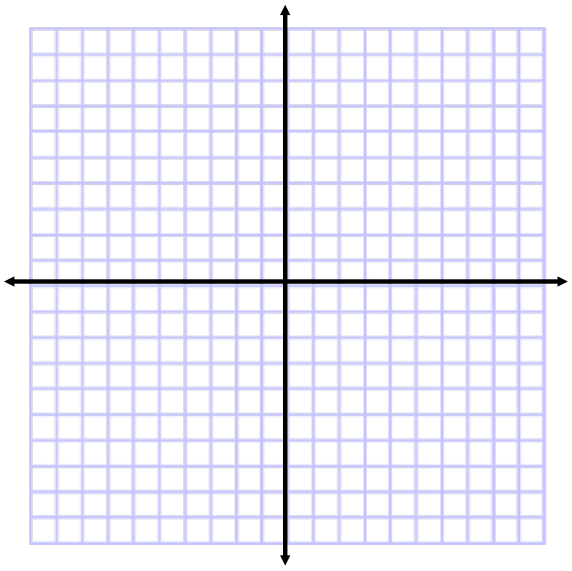
$x = 2$
$2x + y = 1$



$3x + 2y = 6$
$3x + 2y = -4$



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



Use substitution to solve each system of equations. If the system does not have exactly one solution, state whether it has no solution or infinitely many solutions.

$y = 2x - 7$
$3x - 4y = 8$

$3x + -4(2x - 7) = 8$
$3x + -8x + 28 = 8$

$x + 2y = 13$
$-2x - 3y = -18$

$x + y = 16$
$2y = -2x + 2$

$3x - y = 4$
$2x - 3y = -9$

Use elimination to solve each system of equations.

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

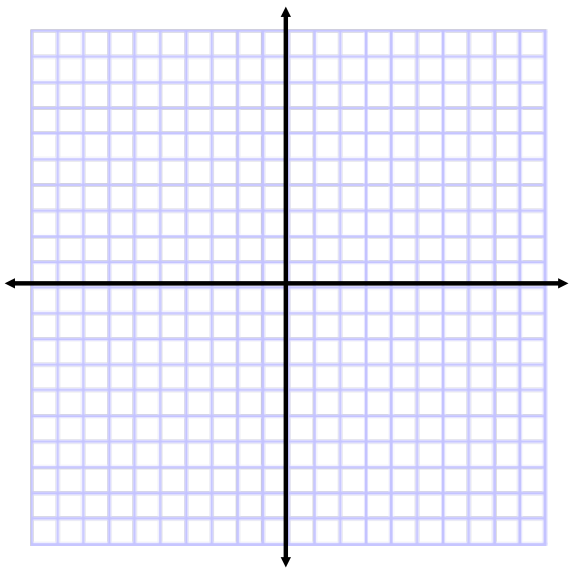
$6x - 8y = 3$
$2x - 8y = -3$

$2x + 3y = 6$
$x + 2y = 5$

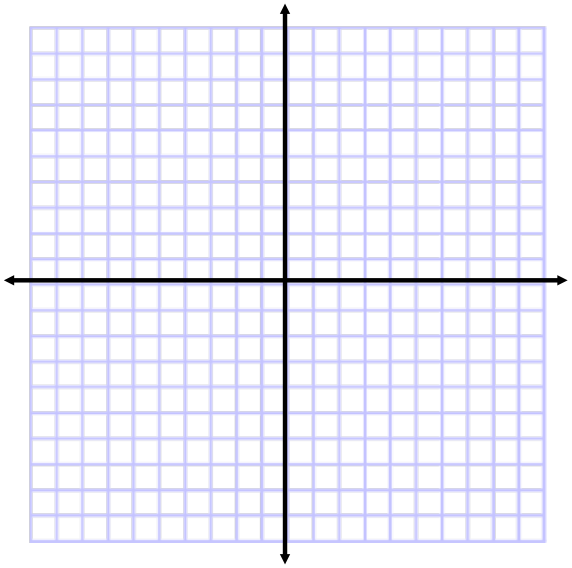
$4x + 5y = 6$
$6x - 7y = -20$

Solve each system of inequalities by graphing.

$y > x - 2$
$y \leq x$



$2x - y \geq 2$
$x - 2y \geq 2$



The sum of two numbers is 41 and their difference is 5.
What are the numbers?

$x + y = 41$
$x - y = 5$
$2x = 46$
$\frac{2x}{2} = \frac{46}{2}$
$x = 23$

The numbers are 23 and 18

$23 - y = 5$
$-23 \quad -23$
$-y = -18$
$y = 18$

The Coffee Cup Cafe makes 90 pounds of coffee that costs $6 per pound. The types of coffee used to make this mixture cost $7 pound and $4 per pound. How many pounds of the $7-per-pound coffee should be used in this mixture?

lbs.
x = \$7 coffee
y = \$4 coffee

$x + y = 90$
$7x + 4y = (90)(6)$

60 lbs of \$7 coffee

$x + y = 90$
$-x \quad -x$
$y = -x + 90$

$7x + 4(-x + 90) = 540$
$7x + -4x + 360 = 540$
$3x + 360 = 540$
$-360 \quad -360$
$\frac{3x}{3} = \frac{180}{3}$
$x = 60$

At a sale on winter clothing, Cody bought two pairs of gloves and four hats for $43.00. Tori bought two pairs of gloves and two hats for $30.00. What were the prices for the gloves and hats?

$2g + 4h = \$43$
$(-)\ 2g + 2h = \$30$
$2h = 13$
$\frac{2h}{2} = \frac{13}{2}$
$h = \$6.50$

gloves are \$8.50
hats are \$6.50

$2g + 2(6.50) = 30$
$2g + 13 = 30$
$-13 \quad -13$
$\frac{2g}{2} = \frac{17}{2}$
$g = \$8.50$

The Foxtail Toy Company makes toy cars and toy dump trucks. They are scaled so that the door handles and wheels are interchangeable. The table gives the door handle and wheel requirements of each type of toy.

C
T

	Wheels	Door Handles
Parts per Toy Car	4	4
Parts per Toy Dump Truck	6	2
Total Available Parts per day	28	16

$4c + 6t \leq 28$
$4c + 2t \leq 16$

Make a graph showing the number of wheels and door handles that can be made in a day. List three possible solutions.

$4c+6t\leq 28$

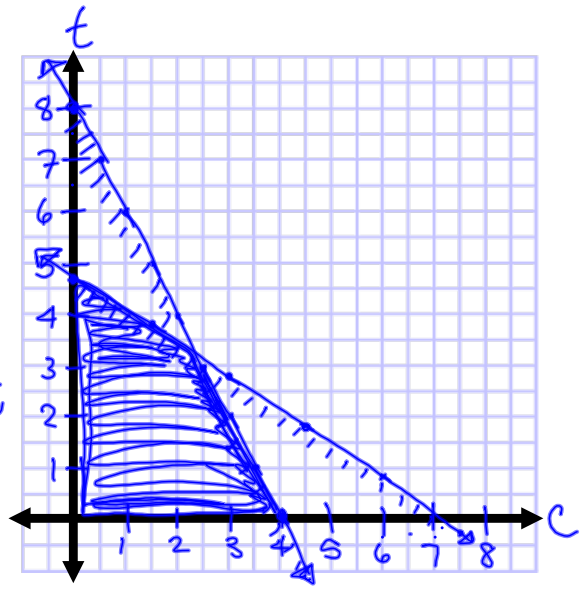
$4c+6t=28$
$-4c \quad -4c$
$6t=-4c+28$
$\frac{6t}{6}=\frac{-4c+28}{6}$
$t=-\frac{2}{3}c+4\frac{2}{3}$
$m=-\frac{2}{3} \quad b=4\frac{2}{3}$

$4(0)+6(6)\leq 28$
$0\leq 28$
T

$4c+2t\leq 16$

$4c+2t=16$
$-4c \quad -4c$
$\frac{2t}{2}=\frac{-4c+16}{2}$
$t=-2+8$
$m=-2$
$b=8$

$4(0)+2(0)\leq 16$
$0\leq 16$
T



1 car, 1 truck
2 cars, 3 truck
2 cars, 2 trucks

1 car, 4 trucks

Chapter 7 Test Tomorrow