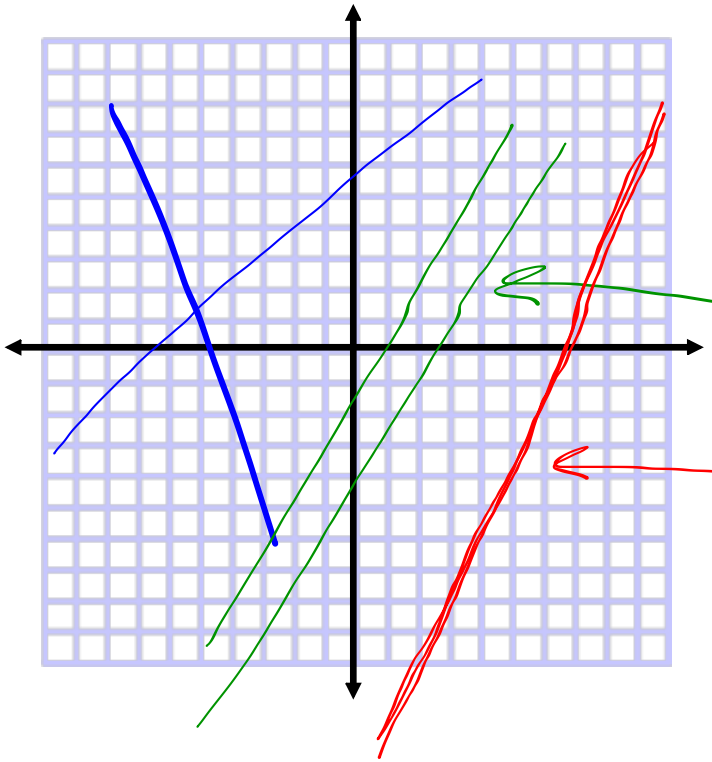
Announcement:

There will be a unit test over chapter 7 (sections 7.1 - 7.6) on Friday, April 20

Section 7.1 - 7.4 Quiz Review

Special types of linear systems:



Normal (one solution) — two lines intersect

No solutions — parallel

Infinite solutions (all real numbers) — same line

How to identify the type of linear system:

Graph & interpret ← Graph (previous page)

$y = \frac{2}{3}x - 4$, $y = \frac{1}{2}x + 7$

$y = \frac{1}{2}x - 4$, $y = \frac{1}{2}x + 6$

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

← Solve for y and predict:
- m's different → one solution
- m's the same, b's not → no solution
- m's the same, b's the same → infinite # of solutions

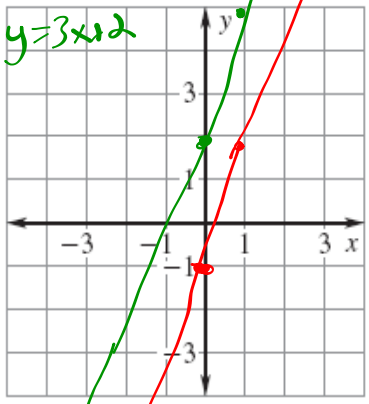
Use substitution or elimination and interpret
- x and y values → one solution
- a = b → infinite # of solutions
- a <> b → no solution

$x = -1$ $y = 4$ $(-1, 4)$	$2 = 2$	$-4 = 7$

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

$-3x + y = 2$

graph



No solution

5. $2y - x = -4$

$2x + y = 3$

$y = -2x + 3$

$y = mx + b$

one solution

$\frac{2y}{2} = \frac{x}{2} - \frac{4}{2}$

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

one solution

no solution

all solutions

6. $4x - y = 2$

$-x + 3y = 9$

substitution/elimination

$-1(-x = -3y + 9)$

$x = 3y - 9$

$4(3y - 9) - y = 2$

$12y - 36 - y = 2$

$+36 \quad +36$

$\frac{11y}{11} = \frac{38}{11}$

$y = \frac{38}{11}$

Use substitution...

26. Comedy Tickets The table below shows the ticket sales at an all-ages comedy club on a Friday night and a Saturday night.

Day	Number of adult tickets	Number of student tickets	Total sales (dollars)
Friday	30	20	910
Saturday	45	30	1365

- (x, y)
- all solutions
- no solution

a. Let x represent the cost (in dollars) of one adult ticket and let y represent the cost (in dollars) of one student ticket. Write a linear system that models the situation.

$(30x + 20y = 910)/10$
$(45x + 30y = 1365)/5$

b. Solve the linear system.

$3(3x + 2y = 91)$
$9x + 6y = 273$
$+(-9x + -6y = -273)$
$0 + 0 = 0$
$0 = 0$

all solution

16. $-6x + 6y = -4$
$2x - 2y = 5$

17. $y + 2x = \frac{8}{3}$
$2x + y = -10$

18. $4x + 3y = 9$
$\frac{3}{4}x + y = 3$

20. Lift Tickets Two families go skiing on a Saturday. One family purchases two adult lift tickets and four youth lift tickets for $166. Another family purchases four adult lift tickets and five youth lift tickets for $263. Let x represent the cost in dollars of one adult lift ticket and let y represent the cost in dollars of one youth lift ticket.

a. Write a linear system that represents this situation.

b. Solve the linear system to find the cost of one adult and one youth lift ticket.

c. How much would it cost two adults and five youths to ski for a day?

22. Getting to School You walk 1.75 miles to school at an average speed r (in miles per hour). On the way back home, you are walking with a friend and your average speed is $\frac{3}{4}r$. The round trip took a total of 90 minutes. Find the average speed for each leg of your trip.

17. Painting and Cleaning During the spring and summer, you do a spring yard cleanup for households and you also paint houses. You earn $8 an hour doing the cleanups and $12 an hour painting. Last spring and summer, you worked a total of 400 hours and earned $3800. How many hours did you spend doing yard cleanups? How many hours did you spend painting?

Homework:
p. 462, 3-36 (every 3rd), 37