Introduction to Systems of Equations

Agenda

Warm-Up

Set up unit 6

Notes

Foldable

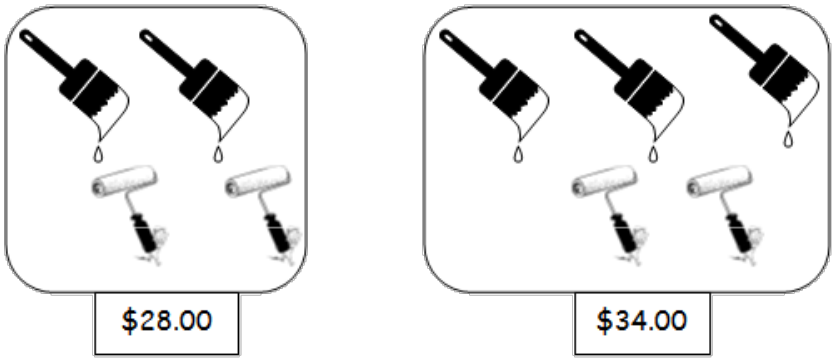
HW: Practice (1 page)

Warm-Up - Wednesday

Using the following pictures, try to figure out the cost of each item. Then explain the process that you used to find the solution.

1) P: $2 HD: $3

2)



On page 75&76, set up unit 6 in your notebook.

Put your "6" tab on page 75 (fold along the dotted line)

UNIT 6

TITLE: Systems

75

Page #	Page Title
76	Words Worth Knowing
77	Intro to Systems
78	Types of Systems

76

Unit 6 Words Worth Knowing

unit 6:

systems

- ☐ System of Equations
- ☐ Solution to a System
- ☐ Let Statement
- ☐ Intersecting
- ☐ Coincident
- ☐ Parallel
- ☐ No solution
- ☐ Infinite Solutions
- ☐ Graphing
- ☐ Substitution
- ☐ Elimination
- ☐ System of Inequalities
- ☐ Solution Set

p. 77

System of Equations:

a set of 2 ~~or more~~ linear equations

that have 2 ~~or more~~ variables

ex. $2x+y=6$
$y=3x$

A Solution to a System of Equations:

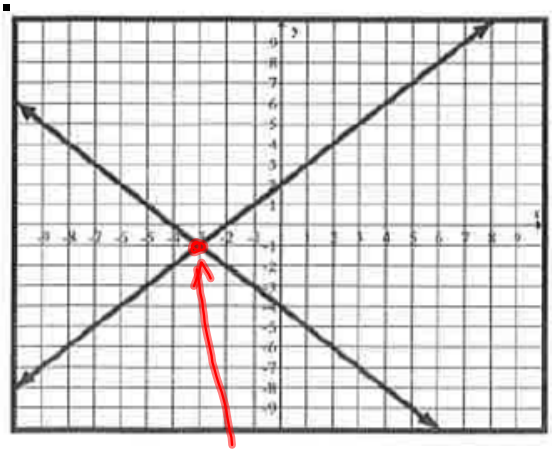
where the lines intersect or the point

that satisfy BOTH equations

-write as an ordered pair.

Determine the solutions to the following systems of equations

1.



Solution
(-3, -1)

2.

x	y
-6	-6
-2	-4
2	-2
6	0
10	2

x	y
-6	-12
-4	-8
-2	-4
0	0
2	4

Same point!
(-2, -4)

p.78

$y = \boxed{\text{slope}}\,x + \_\_\_$

Types of Systems

solve each equation for y= , compare slopes

intersecting lines

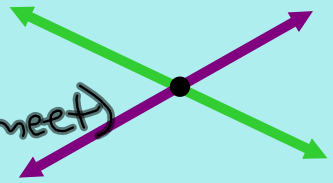
$y = \boxed{2}x$ $m = 2$

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

different m

$\boxed{\text{one sol'n}}$

one solution (where lines meet)



DIFFERENT slopes

coincident lines

solve for y

$2x + 4y = 8$

$8y = 16 - 4x$

$\frac{8y}{8} = \frac{16}{8} - \frac{4x}{8}$

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

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

$2x + 4y = 8$

$-2x \quad -2x$

$\frac{4y}{4} = \frac{-2x}{4} + \frac{8}{4}$

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

infinite

infinite solutions (MANY)

SAME SLOPE/SAME Y-INT

parallel lines

$y = 2x - 1$ $m = 2$ $b = -1$

$\frac{2y}{2} = \frac{4x}{2} + \frac{3}{2}$

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

$m = 2$

$b = \frac{3}{2}$

$\boxed{\text{none}}$

NO solutions

SAME SLOPE

DIFFERENT Y-IN

Determine if the point given is a solution to the system of equations p.77

glade method → plug it in.

3. (5, 2) yes no

$\frac{2}{5}x - y = 0$

$3x - y = 13$

$\frac{2}{5}(5) - 2 \stackrel{?}{=} 0$

$0 = 0$ ✓

$3(5) - 2 \stackrel{?}{=} 13$

$15 - 2 = 13$ ✓

4. (-2, 2) yes no

$x + 3y = 4$

$-x + y = 2$

$(-2) + 3(2) \stackrel{?}{=} 4$

$-2 + 6 = 4$ ✓

$-(-2) + 2 \stackrel{?}{=} 2$

$2 + 2 = 2$

$4 \neq 2$

5. (3, 6) yes no

$y + 3x = 9$

$y = 2x$

$6 + 3(3) = 9$

$15 \neq 9$

2 ✓'s → yes

one or more X's → no

Unit 5 Quiz Averages

2nd - 75

3rd - 68

4th - 63

5th - 70

7th - 75

Algebra I – Unit 6: Topic 1 – Intro to Systems

Practice – Intro to Systems **No textbook correlation**

Name _____ Date _____ Period _____

Determine if the given point is a solution to the equation. yes | NO

1. $(-3, 6)$ $2x - y = -12$
$3x + 2y = -3$

2. $(-1, -4)$ $3y = x - 11$
$-2x + y = -2$

3. $(4, 1)$ $x + 2y = 6$
$x - y = 3$

4. $(2, 1)$ $2x - 5y = -1$
$3x - 4y = -2$

Determine the number of solutions for each system. Write "one", "none" or "infinite".

5. $y = \frac{2}{3}x - 5$
$3y = 2x$

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

7. $x + 2y = 5$
$2x + 4y = 2$