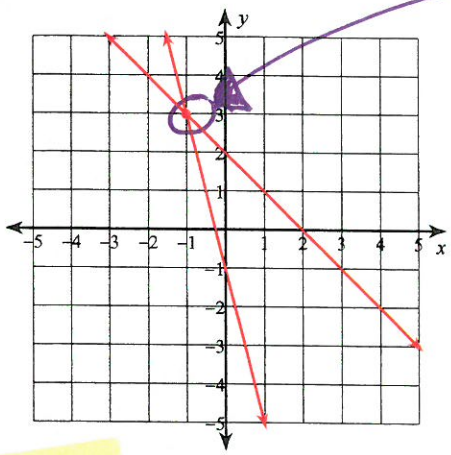
Algebra 1 Name KEY ID: 1

FUNC.d Date_____ Period____

FUNC.d.1
Identify solutions for linear systems of equations and linear systems of inequalities, given a graph.

(a) Clearly mark the solution.
(b) Give the ordered pair for the solution and circle it.

1) $y = -x + 2$
$y = -4x - 1$



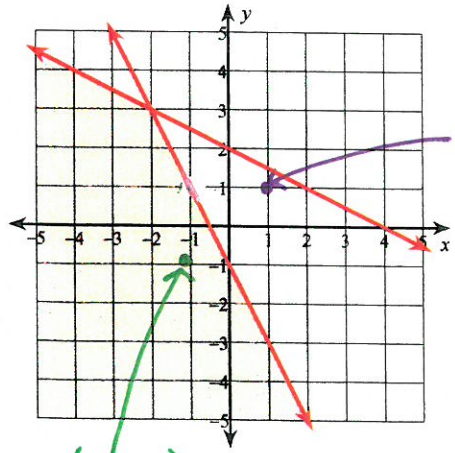
Solution (-1,-3)

FUNC.d.1

Green **(a) Is (-1,-1) a solution** Yes / No. **Explain** It is a solution because its In the solution Region.

(b) Is (1,1) a solution Yes / No. **Explain** Not a solution because it is NOT in the solution Region.

2) $y \leq -\frac{1}{2}x + 2$
$y \leq -2x - 1$



(1,1)

(-1,-1)

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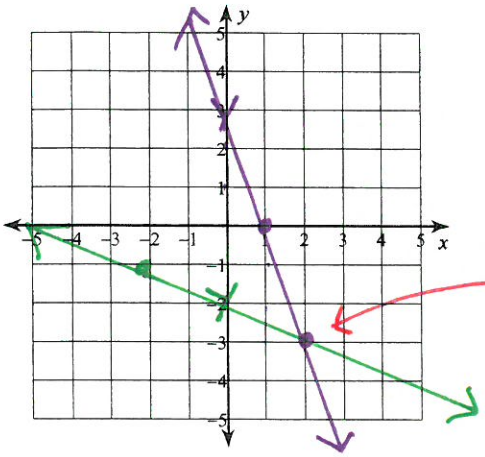
FUNC.d Date _____ Period ____

FUNC.d.2
Graph and solve a system of linear equations.

(a) Clearly graph the equations.
(b) Clearly mark the solution. And give the ordered pair for the solution. Circle the solution. (red)
(c) Remember to check the solution. (blue)

1) $y = -3x + 3$ $m = -3/1$ $b = 3$

$y = -\frac{1}{2}x - 2$ $m = -1/2$ $b = -2$



Solution $(2, -3)$

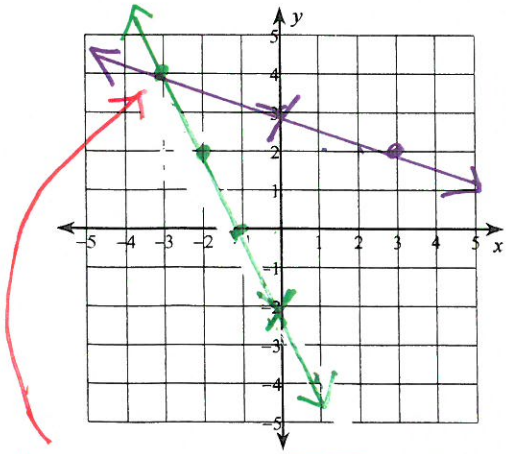
Check in orig. EQ's:

C: $-3 = -3(2) + 3$
$-3 = -3$ ✓

C: $-3 = -\frac{1}{2}(2) - 2$
$-3 = -3$ ✓

FUNC.d.2

2) $2x + y = -2$
$x + 3y = 9$



Solution $(-3, 4)$

Put equations into $y = mx + b$:

$2x + y = -2$
$-2x \quad -2x$
$y = -2x - 2$

$m = -2/1$
$b = -2$

C: $2(-3) + 4 = 2$
$-2 = -2$ ✓

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

$y = -\frac{1}{3}x + 3$
$m = -1/3$
$b = 3$

C: $-3 + 3(4) = 9$
$9 = 9$ ✓

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FUNC.d.3
Graph a system of linear inequalities, and identify the solution region.

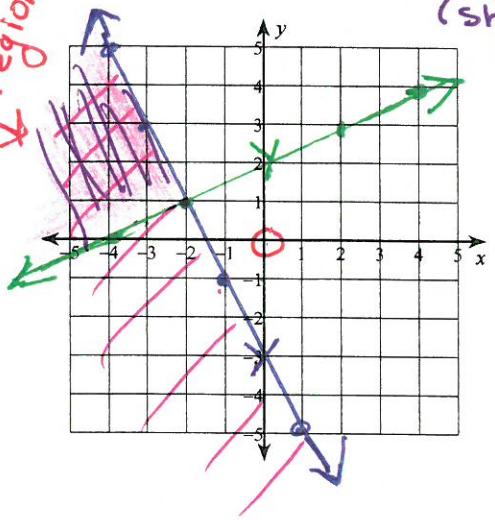
(a) Clearly graphs the inequalities.
(b) Clearly mark the solution region and mark it with an arrow.

T(0,0)

1) $y \leq -2x - 3$ m=-2/1 b=-3 T 0≤-3 F (shade below)

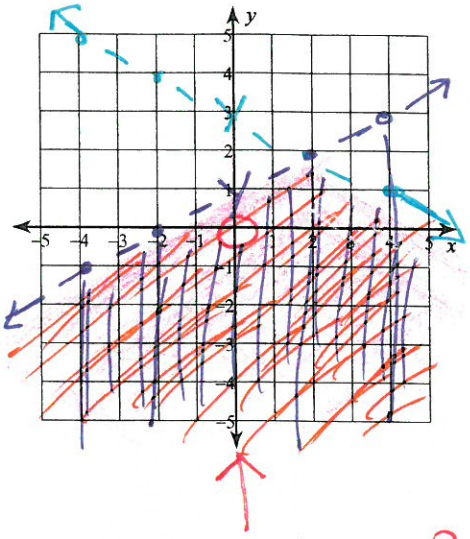
$y \geq \frac{1}{2}x + 2$ m=½ b=2 T 0≥2 F (shade above)

Solution region



2) $y < \frac{1}{2}x + 1$ m=½ b=1 T: 0<1 T (shade below)

$y < -\frac{1}{2}x + 3$ m=-½ b=3 T: 0<3 T (shade below)



Solution Region

Notes: ≤, ≥ solid line
<, > dotted line

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FUNC.d.4
Write, graph, and solve a system of linear equations, given a real world example.

1) The family is going to the county fair. They have two ticket options:
Option 1: The admission price is $4 and cost per ride is $.40.
Option 2: The admission price is $2 and cost per ride is $.80.

Define Variable(s) – remember units:
X = # of rides
Y = total cost in $'s

Define Functions that shows the cost per person for each option using function notation C(x):

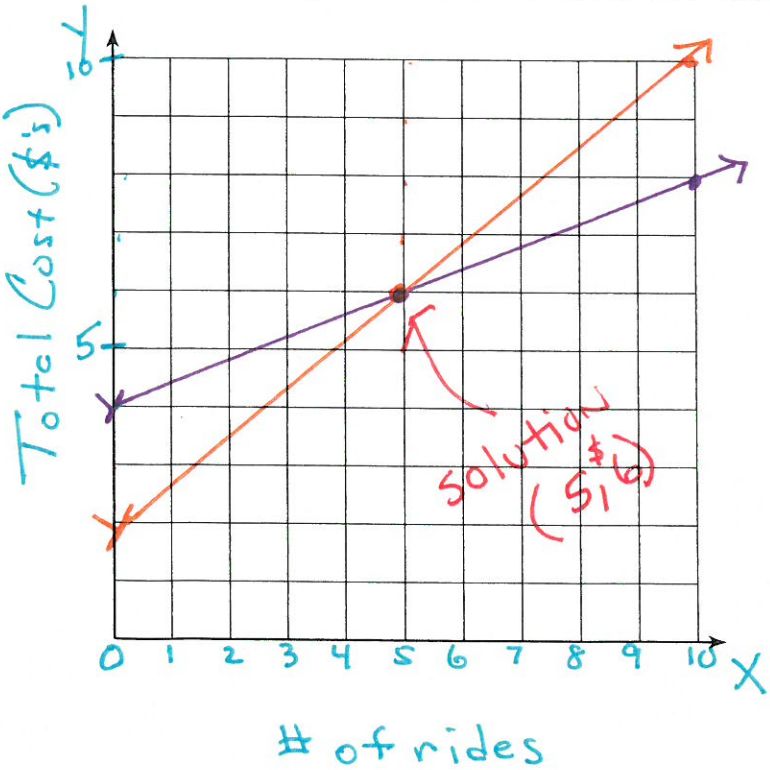
Option 1: $C(x) = 0.4x + 4$ $m = \frac{4}{10} = \frac{2}{5}$

Option 2: $C(x) = 0.8x + 2$ $m = \frac{8}{10} = \frac{4}{5}$

$Y = C(x)$

Use graphing to solve the system of equations. Clearly Graph incluing labels, units, and scales:
Graph with a table OR slope & y-intercept.
Find the number of rides for which the total cost is the same with both ticket options.

Answer (in words) 5 RIDES FOR BOTH OPTIONS COST $6.



X	OPTION 1 C(x)	OPTION 2 C(x)
0	4	2
5	6	6
10	8	10