Honors 1 Name Key

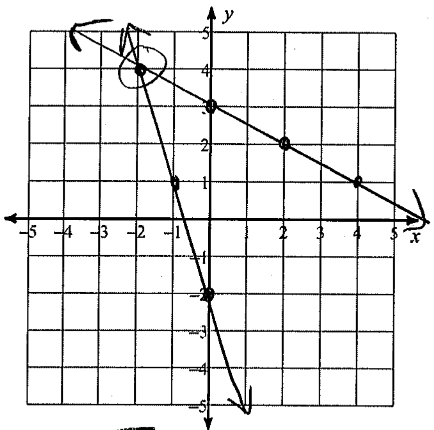
Chapter 6 PRACTICE Test

Period____

Solve each system by graphing if possible.

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

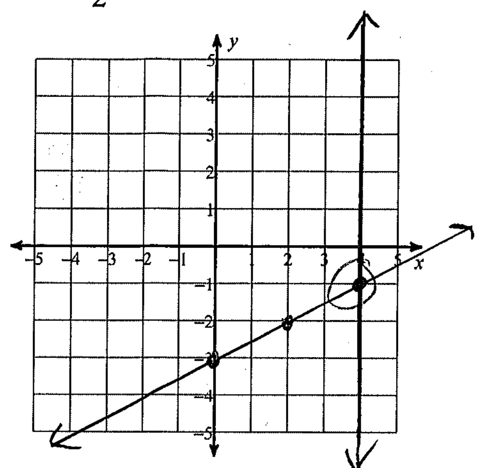
$y = -3x - 2$



$\boxed{(-2, 4)}$

2) $x = 4$

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



$\boxed{(4, -1)}$

Solve each system by ELIMINATION.

3) $-4x + 5y = 7$

$+\ \ 4x - 3y = -1$

$2y = 6$

$y = 3$

$-4x + 5(3) = 7$

$-4x + 15 = 7$

$-4x = -8$

$x = 2$

$\boxed{(2, 3)}$

4) $5x - 3y = -7$

$-\ \ 8x - 3y = -13$

$-3x = 6$

$x = -2$

$5(-2) - 3y = -7$

$-10 - 3y = -7$

$-3y = 3$

$y = -1$

$\boxed{(-2, -1)}$

5) $-4x + 6y = -12 \xrightarrow{\times 2} -8x + 12y = -24$

$8x - 12y = 24 \qquad + \ 8x - 12y = 24$

$0 = 0$

Infinite Solutions

6) $2x - 3y = -5 \xrightarrow{\times 4} 8x - 12y = -20$

$-9x + 4y = 13 \xrightarrow{\times 3} + -27x + 12y = 39$

$-19x = 19$

$x = -1$

$2(-1) - 3y = -5$

$-2 - 3y = -5$

$-3y = -3$

$y = 1$

$\boxed{(-1, 1)}$

Solve each system by SUBSTITUTION.

7) $3x + 6y = -3$

$y = \boxed{-3x - 18}$

$3x + 6(-3x - 18) = -3$

$3x - 18x - 108 = -3$

$-15x = 105$

$x = -7$

$y = -3(-7) - 18$

$y = 21 - 18$

$y = 3$

$\boxed{(-7, 3)}$

8) $y = \boxed{3x - 5}$

$-x + 4y = 2$

$-x + 4(3x - 5) = 2$

$-x + 12x - 20 = 2$

$11x = 22$

$x = 2$

$y = 3(2) - 5$

$y = 6 - 5$

$y = 1$

$\boxed{(2, 1)}$

9) $-x + y = 5 \rightarrow y = \boxed{5+x}$

$-8x - y = 4$

$-8x-(5+x)=4$

$-8x-5-x=4$

$-9x=9$

$x=-1$

$y=5-1$

$y=4$

$\boxed{(-1,4)}$

10) $-3x + 9y = 1$

$x - 3y = -7 \rightarrow x = \boxed{-7+3y}$

$-3(-7+3y)+9y=1$

$21-9y+9y=1$

$21 \neq 1$

$\boxed{\text{No Solution}}$

Solve the system by using the method of your choice. Justify your choice of method.

Elim. or Sub

11) $5x + y = -13 \rightarrow y = \boxed{-13-5x}$

$-3x + 2y = 13$

$-3x+2(-13-5x)=13$

$-3x-26-10x=13$

$-13x=39$

$x=-3$

$y=-13-5(-3)$

$y=-13+15$

$y=2$

$\boxed{(-3,2)}$

Elim.

12) $-7x - 6y = -4 \xrightarrow{\times 2}$ $-14x-12y=-8$

$14x + 12y = 8$ $\quad + \; 14x+12y=8$

$0=0$

$\boxed{\text{Infinite Solutions}}$

Sub

13) $y = \boxed{4x-8}$

$y = 7x - 20$

$4x-8=7x-20$

$12=3x$

$4=x$

$y=4(4)-8$

$y=16-8$

$y=8$

$\boxed{(4,8)}$

Sub

14) $y = \boxed{-7x+3}$

$y = -5x + 1$

$-7x+3=-5x+1$

$2=2x$

$1=x$

$y=-7(1)+3$

$y=-7+3$

$y=-4$

$\boxed{(1,-4)}$

Determine whether the linear system has one solution, no solutions, or infinitely many solutions and state how you know.

15) $3x + 6y = 12$ Solve for Y

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

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

They are parallel, so

$\boxed{\text{no solution}}$

16) $y = \frac{7}{2}x + 4$

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

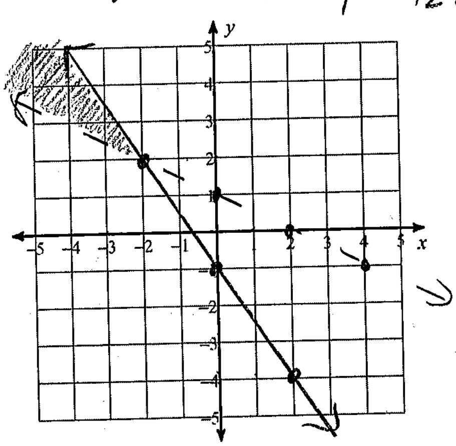
They have different slopes so will cross just once.

$\boxed{\text{One solution}}$

Sketch the solution to each system of inequalities.

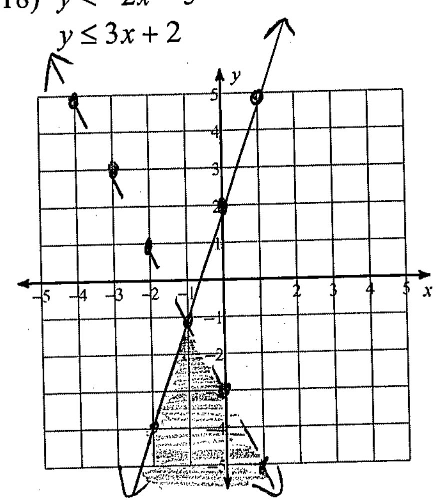
17) $3x + 2y \leq -2 \longrightarrow y \leq -\frac{3}{2}x - 1$

$x + 2y > 2 \longrightarrow y > -\frac{1}{2}x + 1$



18) $y < -2x - 3$

$y \leq 3x + 2$



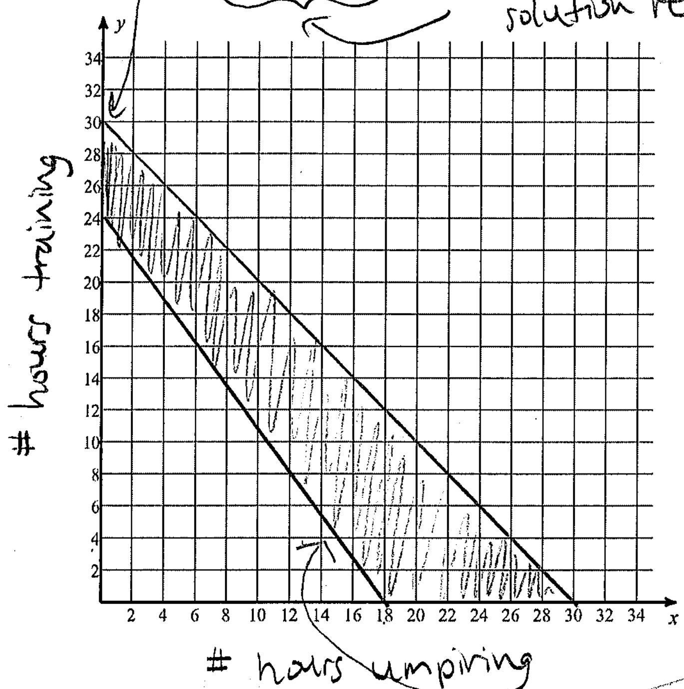
19) During the summer, you want to earn at least \$360 per week. You earn \$20 per hour umpiring baseball, and you earn \$15 per hour personal training your neighbor. You can work at most 30 hours per week.

Write and graph (label your axes) a system of linear inequalities that model the situation to state a combination of umpiring and training hours that satisfy the conditions.

Let x= the number of hours umpiring
Let y= the number of hours training

Inequality 1: $x + y \leq 30$ Inequality 2: $20x + 15y \geq 360$

Solution: (,) Any point in the solution region



20) In the system below, what would the value of A have to equal so the system has no solutions? Explain how you know.

$10x + 8y = 23$
$Ax - 8y = 15$

If $A = -10$, then

$10x + 8y = 23$
$+ \; -10x - 8y = 15$

$0 \neq 38$
No Solution

In order for there to be no solutions we need the variables to cancel out and be left with a false statement. The y parts will cancel with addition, so we need $\boxed{A = -10}$ for the x parts to also cancel.

