Honors Geometry
Systems of Equations
HW: Finish Systems of Equations WS and p.153, #1-4

Name KEY
Date _____ Period_____

I. Solving Systems of Equations by **Substitution** (#1 and #3 from Worksheet)

1) $3x-4y=-15$, $y=-4x-1$ (-1, 3)

$3x-4(-4x-1)=-15$
$3x+16x+4=-15$
$19x+4=-15$
$19x=-19$
$x=-1$

$y=-4(-1)-1$
$y=4-1$
$y=3$

3) $2x-5y=-12$, $x-4y=-9$ (-1, 2)

$x=4y-9$
$2(4y-9)-5y=-12$
$8y-18-5y=-12$
$3y-18=-12$
$3y=6$
$y=2$

$x=4(2)-9$
$x=8-9$
$x=-1$

II. Solving Systems of Equations by **Elimination** (#5 and #9 from Worksheet)

5) $6x-2y=-20$, $5x-6y=5$ $\times -3$

$-18x+6y=60$
$5x-6y=5$
$-13x=65$
$x=-5$

$5(-5)-6y=5$
$-25-6y=5$
$-6y=30$
$y=-5$

(-5, -5)

9) $3x+3y=6$ $\times 8$, $-8x-7y=-6$ $\times 3$

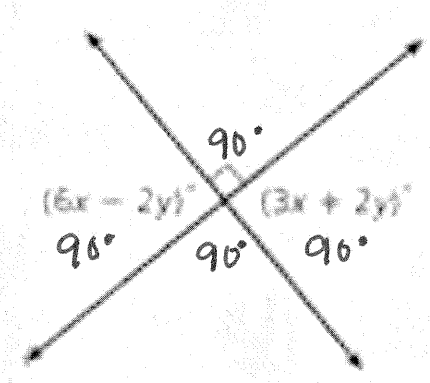
$24x+24y=48$
$-24x-21y=-18$
$3y=30$
$y=10$

$3x+3(10)=6$
$3x+30=6$
$3x=-24$
$x=-8$

(-8, 10)

III. Now apply to GEOMETRY! (Textbook: p.152-153)

1. Find the values of x and y in the figure below.

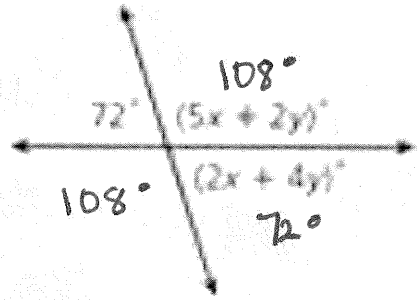


$6x-2y=90$
$3x+2y=90$
$9x=180$
$x=20$

$6(20)-2y=90$
$120-2y=90$
$-2y=-30$
$y=15$

(20, 15)

2. Find the values of x and y in the figure below.



$2x+4y=72$
$(5x+2y=108)\times -2$

$\rightarrow 2x+4y=72$
$-10x-4y=-216$
$-8x=-144$
$x=18$

$5x+2y=108$
$5(18)+2y=108$
$90+2y=108$
$2y=18$

(18, 9)