Geometry Factoring and Systems Review Name_____

Factor:

1) $x^2+11x+30$

$(x+5)(x+6)$

2) $2x^2-7x+6$

$2x^2-3x-4x+6$

$x(2x-3)-2(2x-3)$

$(2x-3)(x-2)$

$2\cdot6=12$: 2, 6; 3, 4; 12, 1

3) $6x^2+14x+4$

*GCF first!

$2(3x^2+7x+2)$

$3x^2+6x+x+2$

$3x(x+2)+1(x+2)$

$2(x+2)(3x+1)$

$3\cdot2=6$: 3, 2; 6, 1

4) $x^2-3x-40$

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

5) $12x^2+14x+4$

$2(6x^2+7x+2)$

$6\cdot2=12$: 12, 1; 6, 2; 3, 4

$6x^2+3x+4x+2$

$3x(2x+1)+2(2x+1)$

$2(2x+1)(3x+2)$

6) x^2-16

$(x-4)(x+4)$

Solve the following for x and y:

7) $\begin{cases}6x-2y=1\\-2x+3y=-5\end{cases}$ $\xrightarrow{\cdot3}$ $6x-2y=1$, $-6x+9y=-15$

$7y=-14$

$y=-2$

$6x-2(-2)=1$

$6x+4=1$

$6x=-3$

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

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

8) $\begin{cases}2x+5y=3\\3x+10y=-3\end{cases}$ $\xrightarrow{\cdot-2}$ $-4x-10y=-6$, $3x+10y=-3$

$-x=-9$

$x=9$

$2(9)+5y=3$

$18+5y=3$

$5y=-15$

$y=-3$

$(9,-3)$

9) $\begin{cases}9x=8y+4\\2x-3y=-4\end{cases}$ $\xrightarrow{\cdot-2}$ $-18x+16y=-8$, $\xrightarrow{\cdot9}$ $18x-27y=-36$

$-11y=-44$

$y=4$

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

$2x-12=-4$

$2x=8$

$x=4$

$(4,4)$