Solutions to WS 33.1 - Solving Systems of Equations by Elimination, #2-16 even

② $\begin{cases} x-3y=-13 \\ -x+4y=15 \end{cases}$

$y=2$

$x-3y=-13$
$x-3(2)=-13$
$x-6=-13$
$x=-7$

$\therefore (-7,2)$

④ $\begin{cases} 5x-2y=3 \\ 5x+y=-9 \end{cases}$ mult. by (-1) $\Rightarrow$ $-5x+2y=-3$, $5x+y=-9$

$3y=-12$
$y=-4$

$5x+y=-9$
$5x+(-4)=-9$
$5x=-5$
$x=-1$

$\therefore (-1,-4)$

⑥ $\begin{cases} x+2y=-1 \\ 4x+3y=-9 \end{cases}$ mult. by (-4) $\Rightarrow$ $-4x-8y=4$, $4x+3y=-9$

$-5y=-5$
$y=1$

$x+2y=-1$
$x+2(1)=-1$
$x+2=-1$
$x=-3$

$\therefore (-3,1)$

⑧ $\begin{cases} 2x+y=-1 \\ 7x-5y=5 \end{cases}$ mult. by 5 $\Rightarrow$ $10x+5y=-5$, $7x-5y=5$

$17x=0$
$x=0$

$2x+y=-1$
$2(0)+y=-1$
$y=-1$

$\therefore (0,-1)$

⑩ $\begin{cases} 4x+3y=27 \\ 3x+4y=29 \end{cases}$ $\times(-3)$ $\Rightarrow$ $-12x-9y=-81$; $\times 4$ $\Rightarrow$ $12x+16y=116$

$7y=35$
$y=5$

$4x+3y=27$
$4x+3(5)=27$
$4x+15=27$
$4x=12$
$x=3$

$\therefore (3,5)$

⑫ $\begin{cases} x+5y=-13 \\ 2x-5y=-19 \end{cases}$

$3x=-32$
$x=-\frac{32}{3}$

$x+5y=-13$
$-\frac{32}{3}+5y=-13$
$-32+15y=-39$
$15y=-7$
$y=-\frac{7}{15}$

$\therefore \left(-\frac{32}{3}, -\frac{7}{15}\right)$

⑭ $\begin{cases} 2x+2y=-8 \\ 3x-3y=18 \end{cases}$ $\times 3$ $\Rightarrow$ $6x+6y=-24$; $\times 2$ $\Rightarrow$ $6x-6y=36$

$12x=12$
$x=1$

$2x+2y=-8$
$2(1)+2y=-8$
$2+2y=-8$
$2y=-10$
$y=-5$

$\therefore (1,-5)$

⑯ $\begin{cases} 2x-y=-6 \\ 2x+3y=14 \end{cases}$ $\times 3$ $\Rightarrow$ $6x-3y=-18$

$2x+3y=14$

$8x=-4$
$x=-\frac{4}{8}$
$x=-\frac{1}{2}$

$2x-y=-6$
$2\left(-\frac{1}{2}\right)-y=-6$
$-1-y=-6$
$-y=-5$
$y=5$

$\therefore \left(-\frac{1}{2}, 5\right)$