$\begin{cases} 2x-3y=6 \\ 3x+4y=\frac{1}{2} \end{cases}$ ← NOT ONE OF THE PROBLEMS IN YOUR BOOK

STEP 1 NEED A 1 HERE

$\left[\begin{array}{cc|c} 2 & -3 & 6 \\ 3 & 4 & \frac{1}{2} \end{array}\right] \xrightarrow{\frac{1}{2}R_1}$

STEP 2 NEED A 0 HERE

$\left[\begin{array}{cc|c} 1 & -\frac{3}{2} & 3 \\ 3 & 4 & \frac{1}{2} \end{array}\right] \xrightarrow{-3R_1+R_2}$

STEP 2

$-3(1)+3=0$ $\quad -3\left(-\frac{3}{2}\right)+4=\frac{9}{2}+\frac{8}{2}=\frac{17}{2}$

$-3(3)+\frac{1}{2}=-9+\frac{1}{2}=-\frac{18}{2}+\frac{1}{2}=-\frac{17}{2}$

STEP 3 NEED A 1 HERE

$\left[\begin{array}{cc|c} 1 & -\frac{3}{2} & 3 \\ 0 & \frac{17}{2} & -\frac{17}{2} \end{array}\right] \xrightarrow{\frac{2}{17}R_2}$

$\frac{2}{17}\left(\frac{17}{2}\right)=1$ $\quad \frac{2}{17}\left(-\frac{17}{2}\right)=-1$

STEP 3

$\left[\begin{array}{cc|c} 1 & -\frac{3}{2} & 3 \\ 0 & 1 & -1 \end{array}\right]$

$y=-1$

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

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

$x+\frac{3}{2}=3$

$x=3-\frac{3}{2}=\frac{6}{2}-\frac{3}{2}=\frac{3}{2}$

$x=\frac{3}{2}$

$\left(\frac{3}{2},-1\right)$ ← solution

$\left\{\left(\frac{3}{2},-1\right)\right\}$ ← solution set