

Alg 2 HW Help for p. 146 # 25

Example: # 26

Solve the system by elimination:

$$\begin{cases} 2w + 5y = -24 \\ 3w - 5y = 14 \end{cases}$$

① Because the coefficients of  $y$  in the two equations are opposites, we can add the equations to eliminate  $y$ .

$$\begin{array}{r} 2w + 5y = -24 \\ 3w - 5y = 14 \\ \hline 5w = -10 \\ w = -2 \end{array}$$

② Now we can use either equation to solve for  $y$ :

$$\begin{array}{l} 2(-2) + 5y = -24 \\ -4 + 5y = -24 \\ 5y = -20 \Rightarrow y = -4 \end{array}$$

cont'd →

$$\begin{cases} 2w + 5y = -24 \\ 3w - 5y = 14 \end{cases}$$

③ Check this solution in the other equation:

$$3(-2) - 5(-4) = -6 + 20 = 14 \quad \checkmark \text{ it checks!}$$

④ The solution point  $(w, y)$  is  $(-2, -4)$ .