$$\text{Let } D = \begin{vmatrix} 1 & -2 \\ -3 & 5 \end{vmatrix} = 5 - 6 = -1$$

$$D_1 = \begin{vmatrix} 4 & -2 \\ -7 & 5 \end{vmatrix} = 20 - 14 = 6$$

$$D_2 = \begin{vmatrix} 1 & 4 \\ -3 & -7 \end{vmatrix} = -7 + 12 = 5$$

$$\text{by definition } x = \frac{D_1}{D} = \frac{6}{-1} = -6$$

$$y = \frac{D_2}{D} = \frac{5}{-1} = -5$$

$$\text{Hence } x = -6$$

$$y = -5$$

Chapter 6 Determinants Ex 6.4 Q2

Let $D = \begin{vmatrix} 2 & -1 \\ 7 & -2 \end{vmatrix} = -4 + 7 = 3$

$D_1 = \begin{vmatrix} 1 & -1 \\ -7 & -2 \end{vmatrix} = -9$

$D_2 = \begin{vmatrix} 2 & 1 \\ 7 & -7 \end{vmatrix} = -21$

Now, $x = \dfrac{D_1}{D} = \dfrac{-9}{3} = -3$

$y = \dfrac{+D_2}{D} = \dfrac{-21}{3} = -7$

Hence $x = -3$

$y = -7$

Chapter 6 Determinants Ex 6.4 Q3

Let $D = \begin{vmatrix} 2 & -1 \\ 3 & 5 \end{vmatrix} = 13$

$D_1 = \begin{vmatrix} 17 & -1 \\ 6 & 5 \end{vmatrix} = 91$

$D_2 = \begin{vmatrix} 2 & 17 \\ 3 & 6 \end{vmatrix} = -39$

$x = \dfrac{D_1}{D} = \dfrac{91}{13} = 7$

$y = \dfrac{D_2}{D} = \dfrac{-39}{13} = -3$

Hence $x = 7$

$y = -3$

Chapter 6 Determinants Ex 6.4 Q4

Let $D = \begin{vmatrix} 3 & 1 \\ 3 & -1 \end{vmatrix} = -6$

$D_1 = \begin{vmatrix} 19 & 1 \\ 23 & -1 \end{vmatrix} = -42$

$D_2 = \begin{vmatrix} 3 & 19 \\ 3 & 23 \end{vmatrix} = 12$

$x = \dfrac{D_1}{D} = \dfrac{-42}{-6} = 7$

$y = \dfrac{D_2}{D} = \dfrac{12}{-6} = -2$

Hence $x = 7$

$y = -2$

********** END *********