Exercise 1.5
$(1) 2x_1 - 5x_2 + 8x_3 = 0$
$-2x_{1}-7x_{2}+x_{3}=0$
$4x_1 + 2x_2 + 7x_3 = 0$
2 -5 8 0
-2 -7 1 0
4 2 7 0
2 -5 8 0 R2+R1
0 -42 9 0
4 2 7 0 ]
$2 - 5 - 8 0 - R_3 - 2R_1$
0 -12 = 9 0
10 12 -9 01
2 -5 8 0
0 (-12) 9 0 R <sub>3</sub> + R <sub>2</sub>
100-00
do is loss and bourses many solition
13 is free and having many solutions in it. So, the system does not have
trivial solution.
Chivial Southern.
$(2) \chi_1 - 2\chi_2 + 3\chi_3 = 0$
$-2x_1 - 3x_2 - 4x_3 = 0$
$2x_1 - 4x_2 + 9x_3 = 0$
at the state of th
1 -2 2 -0
-2 -2 -1
2 -4 0

$$\begin{bmatrix}
1 & -9 & 3 & 0 \\
0 & -9 & 2 & 0 \\
2 & -4 & 0 & 0
\end{bmatrix}$$

$$\begin{bmatrix}
1 & -2 & 3 & 0 \\
0 & -7 & 2 & 0 \\
0 & 0 & 3 & 0
\end{bmatrix}$$

$$7_1 - 27_2 + 37_3 = 0 \longrightarrow 0$$

$$-77_2 + 27_3 = 0 \longrightarrow 0$$

$$3 \implies 7_3 = 0 \longrightarrow 0$$

$$9ut equ @ in equ @$$

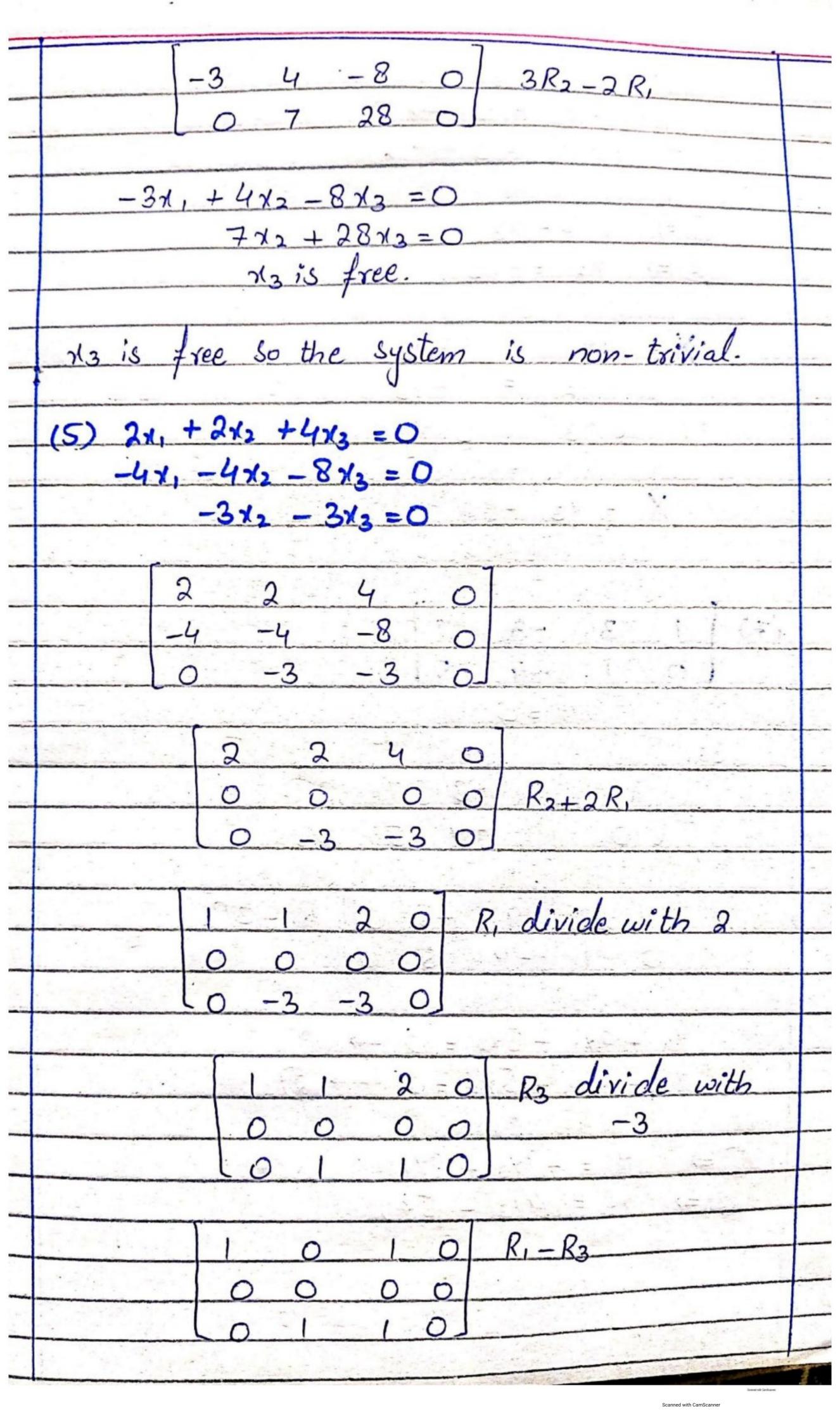
$$-77_2 + 2(0) = 0$$

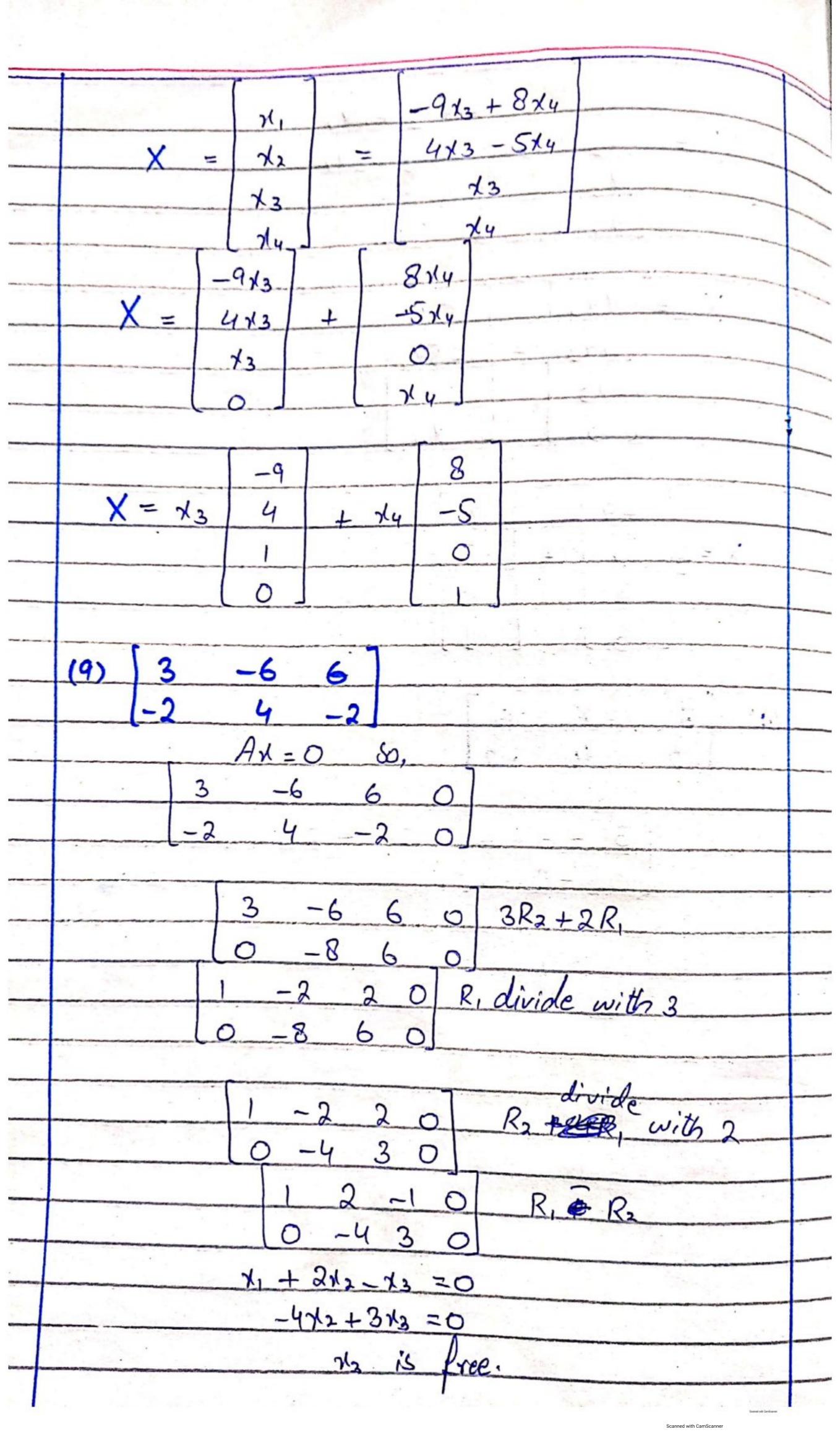
$$-77_2 + 0 = 0$$

$$-77_2 + 0 = 0$$

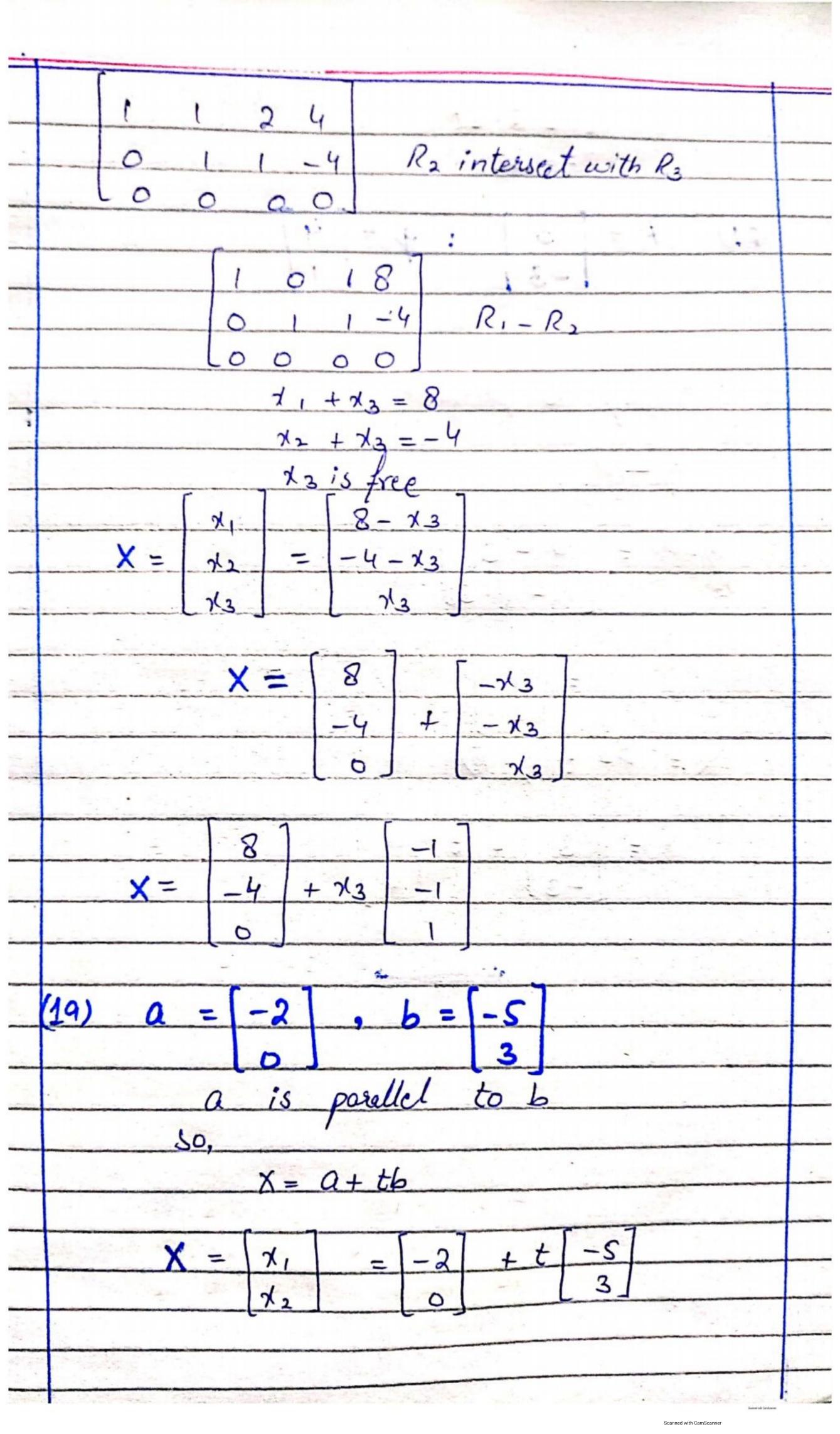
$$7_3 = 0 \longrightarrow 0$$

$$7_4 = 0 \longrightarrow 0$$





Scanned with CamScanner



$$\chi_1 = 2 - 5t$$

$$\chi_2 = 3t$$

(21) 
$$P = \begin{bmatrix} 3 \\ -3 \end{bmatrix}$$
;  $q = \begin{bmatrix} 4 \\ 1 \end{bmatrix}$ 

Pgg is parallel

9-P

$$9-P = 4-3$$
 $1-(-3)$ 

$$X = \begin{bmatrix} 3 \\ -3 \end{bmatrix} + t \begin{bmatrix} 1 \\ 4 \end{bmatrix}$$