(1) $AV = 0$

Solusi trivial / non-trivial dgn cari A^{-1} ?

Solusi SPL ?

$$A = \left(\begin{array}{cccc|cccc} 3 & 1 & 2 & 1 & 1 & 0 & 0 & 0 \\ 8 & 5 & -1 & 1 & 0 & 1 & 0 & 0 \\ 7 & 3 & 2 & 0 & 0 & 0 & 1 & 0 \\ -3 & -1 & 6 & 3 & 0 & 0 & 0 & 1 \end{array}\right)$$

$\downarrow R_1 / 3$

$$\left(\begin{array}{cccc|cccc} 1 & 1/3 & 2/3 & 1/3 & 1/3 & 0 & 0 & 0 \\ 8 & 5 & -1 & 1 & 0 & 1 & 0 & 0 \\ 7 & 3 & 2 & 0 & 0 & 0 & 1 & 0 \\ -3 & -1 & 6 & 3 & 0 & 0 & 0 & 1 \end{array}\right)$$

$R_2 - 8R_1$
$R_3 - 7R_1$
$R_4 + 3R_1$

$$\left(\begin{array}{cccc|cccc} 1 & 1/3 & 2/3 & 1/3 & 1/3 & 0 & 0 & 0 \\ 0 & 7/3 & -19/3 & 1/3 & -8/3 & 1 & 0 & 0 \\ 0 & 2/3 & -8/3 & -7/3 & -7/3 & 0 & 1 & 0 \\ 0 & 0 & 8 & 1 & 1 & 0 & 0 & 1 \end{array}\right)$$

$\downarrow R_2 \left(\frac{3}{7}\right)$

$$\left(\begin{array}{cccc|cccc} 1 & 1/3 & 2/3 & 1/3 & 1/3 & 0 & 0 & 0 \\ 0 & 1 & -19/7 & 1/7 & -8/7 & 3/7 & 0 & 0 \\ 0 & 2/3 & -8/3 & -7/3 & -7/3 & 0 & 1 & 0 \\ 0 & 0 & 8 & 1 & 1 & 0 & 0 & 1 \end{array}\right)$$

$\downarrow R_3 - 2/3 R_2$

$$\left(\begin{array}{cccc|cccc} 1 & 1/3 & 2/3 & 1/3 & 1/3 & 0 & 0 & 0 \\ 0 & 1 & -19/7 & 1/7 & -8/7 & 3/7 & 0 & 0 \\ 0 & 0 & -6/7 & -19/7 & -11/7 & -2/7 & 1 & 0 \\ 0 & 0 & 8 & 1 & 1 & 0 & 0 & 1 \end{array}\right)$$

$\downarrow R_3 \left(-\frac{7}{6}\right)$

$$\left(\begin{array}{cccc|cccc} 1 & 1/3 & 2/3 & 1/3 & 1/3 & 0 & 0 & 0 \\ 0 & 1 & -19/7 & 1/7 & -8/7 & 3/7 & 0 & 0 \\ 0 & 0 & 1 & 19/6 & 11/6 & 1/3 & -7/6 & 0 \\ 0 & 0 & 8 & 1 & 1 & 0 & 0 & 1 \end{array}\right)$$

$\downarrow R_4 - 8R_3$

$$\left(\begin{array}{cccc|cccc} 1 & 1/3 & 2/3 & 1/3 & 1/3 & 0 & 0 & 0 \\ 0 & 1 & -19/7 & 4/7 & -8/7 & 3/7 & 0 & 0 \\ 0 & 0 & 1 & 19/6 & 11/6 & 1/3 & -7/6 & 0 \\ 0 & 0 & 0 & -64/3 & -41/3 & -8/3 & 28/3 & 1 \end{array}\right)$$

$\downarrow R_4 \left(-\frac{3}{64}\right)$

$$\left(\begin{array}{cccc|cccc} 1 & 1/3 & 2/3 & 1/3 & 1/3 & 0 & 0 & 0 \\ 0 & 1 & -19/7 & 4/7 & -8/7 & 3/7 & 0 & 0 \\ 0 & 0 & 1 & 19/6 & 11/6 & 1/3 & -7/6 & 0 \\ 0 & 0 & 0 & 1 & 41/64 & 1/8 & 7/16 & -3/64 \end{array}\right)$$

$\downarrow R_1 - \frac{1}{3}R_2$

$$\left(\begin{array}{cccc|cccc} 1 & 0 & 11/7 & 1/7 & 5/7 & -1/7 & 0 & 0 \\ 0 & 1 & -19/7 & 4/7 & -8/7 & 3/7 & 0 & 0 \\ 0 & 0 & 1 & 19/6 & 11/6 & 1/3 & -7/6 & 0 \\ 0 & 0 & 0 & 1 & 41/64 & 1/8 & 7/16 & -3/64 \end{array}\right)$$

$R_2 + \frac{19}{7}R_3 \downarrow R_1 - \frac{11}{7}R_3$

$$\left(\begin{array}{cccc|cccc} 1 & 0 & 0 & -29/6 & -13/6 & -2/3 & 11/6 & 0 \\ 0 & 1 & 0 & 55/6 & 23/6 & 4/3 & -19/6 & 0 \\ 0 & 0 & 1 & 19/6 & 11/6 & 1/3 & -7/6 & 0 \\ 0 & 0 & 0 & 1 & 41/64 & 1/8 & 7/16 & -3/64 \end{array}\right)$$

$R_3 - \frac{19}{6}R_4 \downarrow \begin{array}{l} R_1 + \frac{29}{6}R_4 \\ R_2 - \frac{55}{6}R_4 \end{array}$

$$\left(\begin{array}{cccc|cccc} 1 & 0 & 0 & 0 & 119/128 & -1/16 & 379/96 & -29/128 \\ 0 & 1 & 0 & 0 & -261/128 & 3/16 & -689/96 & 55/128 \\ 0 & 0 & 1 & 0 & -25/128 & -1/16 & -245/96 & 19/128 \\ 0 & 0 & 0 & 1 & 41/64 & 1/8 & 7/16 & -3/64 \end{array}\right)$$

$$\therefore A^{-1} = \begin{pmatrix} \frac{119}{128} & -\frac{1}{16} & \frac{379}{96} & -\frac{29}{128} \\ -\frac{261}{128} & \frac{3}{16} & -\frac{689}{96} & \frac{55}{128} \\ -\frac{25}{128} & -\frac{1}{16} & -\frac{245}{96} & \frac{19}{128} \\ \frac{41}{64} & \frac{1}{8} & \frac{7}{16} & -\frac{3}{64} \end{pmatrix}$$