Berechne A^{-1}

a) $A = \begin{pmatrix} 1 & 2 & -1 \\ 2 & 1 & 2 \\ -1 & -1 & 1 \end{pmatrix}$

1	2	-1	|	1	0	0	· (-2)
2	1	2	|	0	1	0	
-1	-1	1	|	0	0	1	

1	2	-1	|	1	0	0	
0	-3	4	|	-2	1	0	· (-2)
0	1	0	|	1	0	1	·3

1	0	-1	|	-1	0	-2	
0	0	4	|	1	1	3	: 4
0	1	0	|	1	0	1	

1	0	-1	|	-1	0	-2	
0	1	0	|	1	0	1	
0	0	1	|	¼	¼	¾	

1	0	0	|	-¾	¼	-5/4
0	1	0	|	1	0	1
0	0	1	|	¼	¼	¾

$$A^{-1} = \begin{pmatrix} -3/4 & 1/4 & -5/4 \\ 1 & 0 & 1 \\ 1/4 & 1/4 & 3/4 \end{pmatrix}$$

b) $A = \begin{pmatrix} 1 & -1 & -2 \\ 2 & -1 & -3 \\ 3 & 2 & 1 \end{pmatrix}$

1	-1	-2	|	1	0	0	· (-2)
2	-1	-3	|	0	1	0	
3	2	1	|	0	0	1	· (-3)

1	-1	-2	|	1	0	0	
0	1	1	|	-2	1	0	· (-5)
0	5	7	|	-3	0	1	

1	0	-1	|	-1	1	0
0	1	1	|	-2	1	0
0	0	2	|	7	-5	1 : 2

1	0	-1	|	-1	1	0	
0	1	1	|	-2	1	0	
0	0	1	|	7/2	-5/2	1/2	· (-1)

1	0	0	|	5/2	-3/2	1/2
0	1	0	|	-11/2	7/2	-1/2
0	0	1	|	7/2	-5/2	1/2

$$A^{-1} = \frac{1}{2}\begin{pmatrix} 5 & -3 & 1 \\ -11 & 7 & -1 \\ 7 & -5 & 1 \end{pmatrix}$$