Bonusuppgift LANA, Block 1 Uppg. 3

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1 Resultat

1.1 Del A

$$A = \begin{bmatrix} 1 & 1 & 0 & 0 \\ 1 & 0 & 1 & 1 \\ 1 & 0 & 2 & 1 \\ 0 & 1 & 0 & 1 \end{bmatrix}$$

Avkodad text: *"Everything should be made as simple as possible but not simpler. (A Einstein)"*

1.2 Del B

$$A = \begin{bmatrix} 0 & 1 & 2 & 0 \\ 1 & 0 & 0 & 2 \\ 1 & 1 & 1 & 2 \\ 0 & 2 & 2 & 1 \end{bmatrix}$$

Avkodad text: *"The significant problems we face cannot be solved at the same level of thinking we were at when we created them. (A. Einstein)"*

1.3 Del C

$$A = \begin{bmatrix} 1 & 2 & 1 & 0 \\ 2 & 1 & 0 & 1 \\ 0 & 1 & 0 & 1 \\ 0 & 2 & 1 & 1 \end{bmatrix}$$

Avkodad text: *"Nej Nej - vektorerna ej oberoende - se upp med icke inverterbara matriser"*

2 MATLAB-kod

2.1 decode.m

```matlab
%% decode.m
function p = decode(f,A)
  m=floor(length(f)/4);
  pp=abs(reshape(f(1:4*m),4,m));
  cc=round(A\pp);
  cc(all(cc==0,2),:)=[];
  p=char(reshape(cc,1,4*m));
  p=[p,'␣','␣','␣'];
```

2.2 crack.m

```matlab
%% crack.m
function A = crack(c,t)
  m=min(floor([length(c) length(t)]/4));
  ss=abs(reshape(t(1:4*m),4,m));
  cc=abs(reshape(c(1:4*m),4,m));
  A=round(cc/ss);
```