Contents

Exercici 10: Exemple minims quadrats

```
A=[1 1 1 0; 1 0 1 2; 1 1 0 1; 0 -1 2 0; -1 1 -1 1]
b=[2;3;4;2;1]
```

```
A =
      1      1      1      0
      1      0      1      2
      1      1      0      1
      0     -1      2      0
     -1      1     -1      1
b =
      2
      3
      4
      2
      1
```

Equacions normals

```
B=A'*A
c=A'*b
```

```
B =
      4      1      3      2
      1      4     -2      2
      3     -2      7      1
      2      2      1      6
c =
      8
      5
      8
     11
```

Sol de residu mínim

```
x=B\c
```

```
x =
     0.14286
      1.2857
      1.2857
      1.1429
```

Comparem Residus

```
y=[0;-1; 2;-1]
e1=norm(b-A*x)
e2=norm(b-A*y)
```

```
y =
     0
    -1
     2
    -1
e1 =
      1.8898
e2 =
      8.9443
```

Resolució per QR

```
[Q,R]=qr(A); b1=Q'*b; sol=R\b1
```

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