```
Define dlqr(a,b,q,r,n)=Func                                   Done
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  Local i,lambda,p,oldp,k
  lambda:=eigVl(a)
  Disp "Eigen Values: ",lambda
  Disp "Size of Eigen Values: ",|lambda|
  p:=identity(dim(lambda))
  i:=0
  Loop
    oldp:=p
    i:=i+1
    p:=q+a^T·p·a−a^T·p·b·(r+b^T·p·b)^-1·b^T·p·a
    If i>n
      Exit
  EndLoop
  Disp "P: ",p
  k:=(r+b^T·p·b)^-1·b^T·p·a
  Disp "K: ",k
  EndFunc
```

$$dlqr\left(\begin{bmatrix}0 & -1\\ 1 & 1\end{bmatrix},\begin{bmatrix}0\\ 1\end{bmatrix},\begin{bmatrix}1 & 0\\ 0 & 1\end{bmatrix},[1],20\right)$$

Eigen Values: $\{0.5+0.866025\cdot i, 0.5-0.866025\cdot i\}$

Size of Eigen Values: $\{1.,1.\}$

P: $\begin{bmatrix}1.75788 & 0.610149\\ 0.610149 & 3.13016\end{bmatrix}$

K: $\begin{bmatrix}0.757879 & 0.610149\end{bmatrix}$

$$\begin{bmatrix}0.757879 & 0.610149\end{bmatrix}$$