```
function [p] = TDiag(a, b, c, d)

[n,~] = size(d);
for i = 1:n-1
    alpha = a(i+1,1)/b(i,1);
    a(i+1,1) = a(i+1,1) - alpha*b(i,1);
    b(i+1,1) = b(i+1,1) - alpha*c(i,1);
    d(i+1,1) = d(i+1,1) - alpha*d(i,1);
end

for i = n:-1:2
   alpha = c(i-1,1)/b(i,1);
   c(i-1,1) = c(i-1,1) - alpha*b(i,1);
   d(i-1,1) = d(i-1,1) - alpha*d(i,1);
end
d = d./b;
p = d;
end
```

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