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```
function T = ChiTest(sample,k)
% we divide [0,1] into k subintervals
expected = length(sample)/k;
% Count number of sample values in each interval
observed = histcounts(sample, (0:1/k:1));
% Now we calculate square of difference to expected
% We can avoid a for loop here!
T = sum((observed-expected).^2);
% Finally divide by expected to get the test statistic
T = T/expected;
```

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