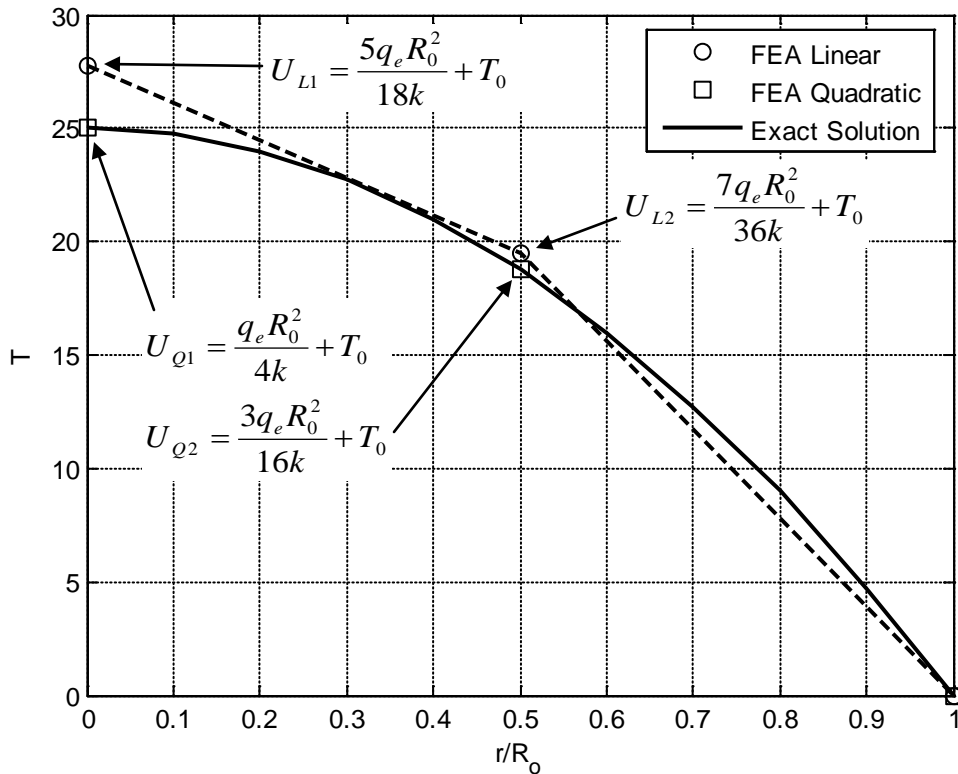


## Homework 4.15 Comparisons (Using MATLAB)

Comparison Plot Exercise 4.15,  $T_o=0$ ,  $qR_o^2/k = 100$



### % Exercise 4.15 - Plot of Results

```
clc
```

```
To=0;T1=100;% Note T1=qRo^2/k
```

```
R=[0,0.5,1];% for discrete plotting of FEA results
```

```
r=0:0.1:1;% for continuous plotting of exact solution
```

```
T=To+(T1/4)*(1-(r.^2));
```

```
UL=[To+(5/18)*T1,To+(7/36)*T1,To];
```

```
UQ=[To+(1/4)*T1,To+(3/16)*T1,To];
```

```
plot(R,UL,'ok');
```

```
hold on;
```

```
plot(R,UQ,'sk')
```

```
plot(r,T,'k-','linewidth',2)
```

```
xlabel('r/R_o');ylabel('T')
```

```
grid on
```

```
legend('FEA Linear','FEA Quadratic','Exact Solution')
```

```
title('Comparison Plot Exercise 4.15, T_o=0, qR_o^2/k = 100')
```

```
line(R,UL,'color','k','linewidth',2);
```