

```
In[8]:= g[y_] := -100 + 20 (k^2 - k l + l^2) y + 4 (k^2 - k l + l^2)^2 y^2 + k^2 (k - l)^2 l^2 y^3
```

```
In[10]:= f[x_] := g[x / (k^2 - k l + l^2)]
```

```
In[31]:= f[x]
```

```
Out[31]= -100 + 20 x + 4 x^2 +  $\frac{k^2 (k - l)^2 l^2 x^3}{(k^2 - k l + l^2)^3}$ 
```

```
In[35]:= Solve[-100 + 20 x + 4 x^2 + 0 x^3 == 0, x]
```

```
Out[35]= {{x ->  $\frac{5}{2} (-1 - \sqrt{5})$ }, {x ->  $\frac{5}{2} (-1 + \sqrt{5})$ }}
```

```
In[25]:= f2[x_] := -100 + 20 x + 4 x^2 + u x^3
u[t_] := (1 - t)^2 t^2 / (1 - t + t^2)
Simplify[u[t] - u[1 - t]]
u[1/2]
```

```
Out[27]= 0
```

```
Out[28]=  $\frac{1}{12}$ 
```

```
In[29]:= Plot[u[t], {t, 0, 1}]
```

