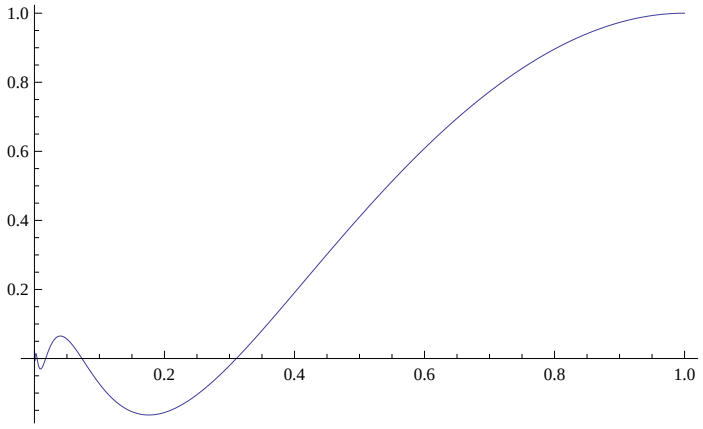
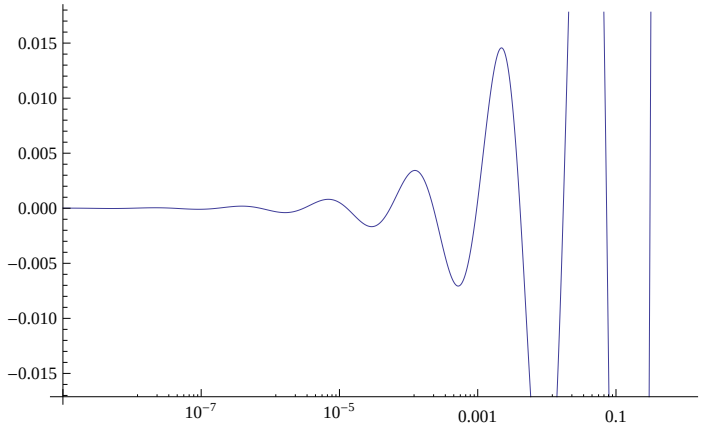
```
Sol = NDSolve[
    y''[x] - 3 y'[x] + (5/x^2 + Cos[x]) y[x] == 0 && y[1] == 1 && y'[1] == 0,
    y[x], {x, ϵ = 10^-9, 1}
  ];
Plot[Evaluate[y[x] /. Sol], {x, ϵ, 1}, PlotPoints → 1000]
```




```
LogLinearPlot[Evaluate[y[x] /. S], {x, ϵ, 1}, PlotPoints → 1000]
```

InterpolatingFunction::dmval :

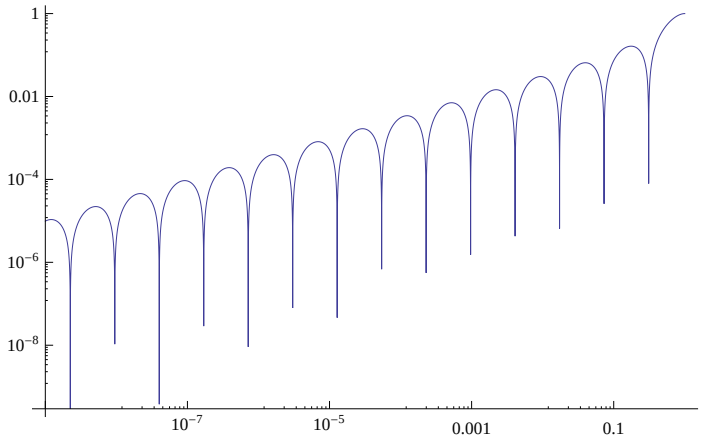
Input value {−20.7232} lies outside the range of data in the interpolating function. Extrapolation will be used. ≫



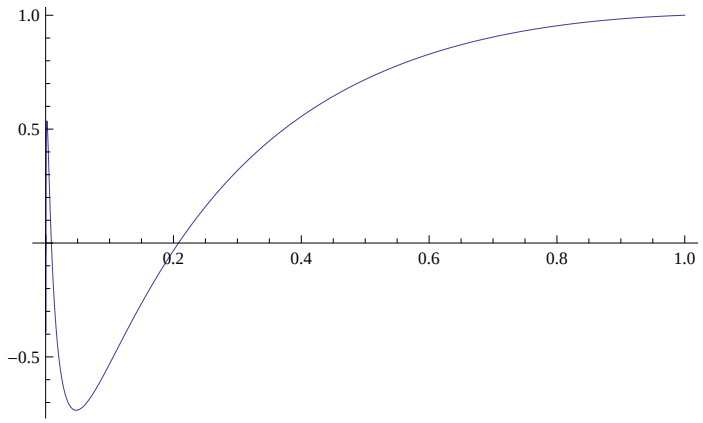
```
LogLogPlot[Evaluate[Abs[y[x]] /. S], {x, ϵ, 1}, PlotPoints → 1000]
```

InterpolatingFunction::dmval :

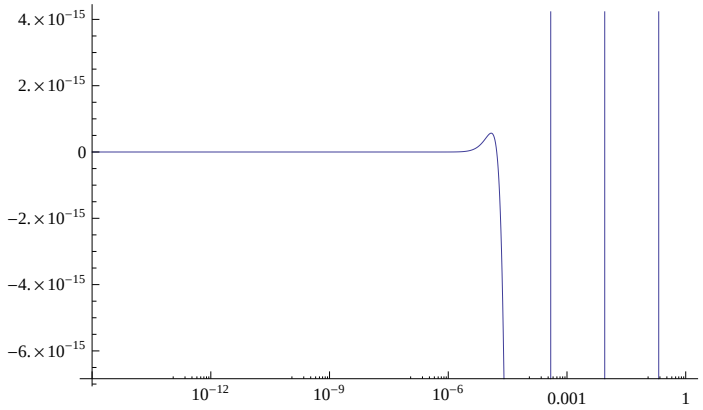
Input value {−20.7232} lies outside the range of data in the interpolating function. Extrapolation will be used. ≫




```
Plot[x^(1/10) Cos[Log[x]], {x, ϵ, 1}, PlotPoints → 1000]
```



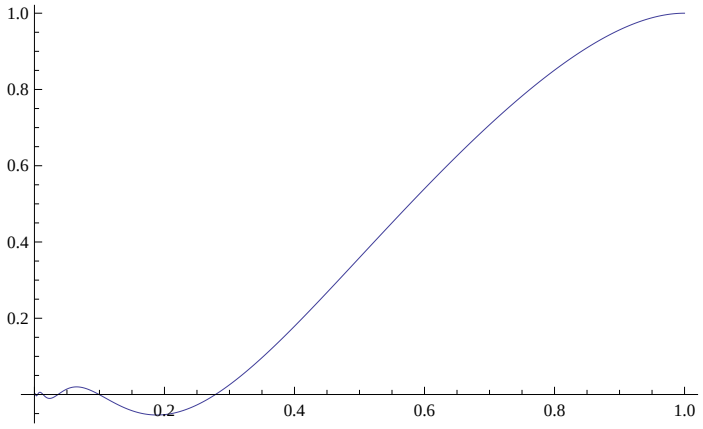

```
LogLinearPlot[x^3 Cos[Log[x]], {x, ϵ, 1}, PlotPoints → 1000]
```




```
NSolve[3 r (r - 1) + 2 r + 3 == 0, r]
```

```
{{r → 0.166667 - 0.986013 i}, {r → 0.166667 + 0.986013 i}}
```

```
S = NDSolve[
    y''[x] - 8 y'[x] + (10/x^2 + Cos[x]) y[x] == 0 && y[1] == 1 && y'[1] == 0,
    y[x], {x, ϵ = 10^-15, 1}
   ];
Plot[Evaluate[y[x] /. S], {x, ϵ, 1}, PlotPoints → 1000]
```



```
LogLinearPlot[Evaluate[y[x] /. S], {x, ϵ, 1}, PlotPoints → 1000]
```

InterpolatingFunction::dmval :

Input value {−34.5387} lies outside the range of data in the interpolating function. Extrapolation will be used. ≫

InterpolatingFunction::dprec :

The precision of input value {−34.5387} and/or the interpolation grid is insufficient to compute the value. ≫

InterpolatingFunction::dmval :

Input value {−34.5042} lies outside the range of data in the interpolating function. Extrapolation will be used. ≫

InterpolatingFunction::dprec :

The precision of input value {−34.5042} and/or the interpolation grid is insufficient to compute the value. ≫

InterpolatingFunction::dmval :

Input value {−34.4696} lies outside the range of data in the interpolating function. Extrapolation will be used. ≫

General::stop : Further output of InterpolatingFunction::dmval will be suppressed during this calculation. ≫

InterpolatingFunction::dprec :

The precision of input value {−34.4696} and/or the interpolation grid is insufficient to compute the value. ≫

General::stop : Further output of InterpolatingFunction::dprec will be suppressed during this calculation. ≫