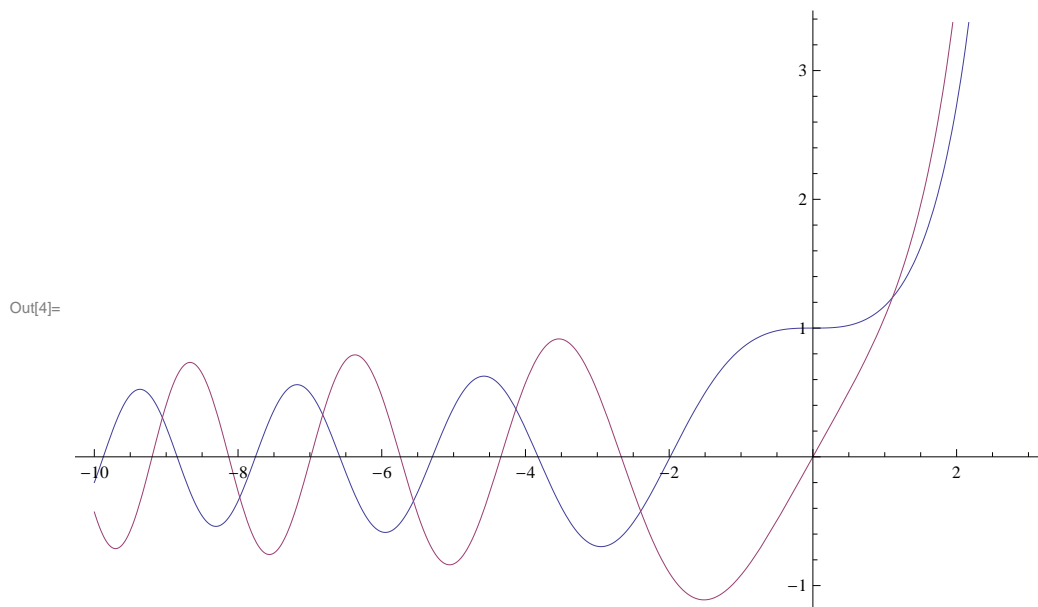


Pensieve header: Plotting the solutions of the Airy equation, $y''=xy$.

```
In[1]:= Ai1 = NDSolve[y''[x] == x y[x] && y[0] == 1 && y'[0] == 0, y[x], {x, -10, 3}];
Ai2 = NDSolve[y''[x] == x y[x] && y[0] == 0 && y'[0] == 1, y[x], {x, -10, 3}];
Ai = Join[Ai1, Ai2]
```

```
Out[3]:= {{y[x] -> InterpolatingFunction[{{-10., 3.}}, <>][x]},
{y[x] -> InterpolatingFunction[{{-10., 3.}}, <>][x]}}
```

```
In[4]:= Plot[Evaluate[y[x] /. Ai], {x, -10, 3}]
```



```
In[5]:= a[0] = 1; a[1] = 0; a[2] = 0; a[k_] /; k > 2 := a[k] =  $\frac{a[k-3]}{k(k-1)}$ ;
```

```
Airy[n_] :=  $\sum_{k=0}^n a[k] x^k$ ; Airy[18]
```

```
Out[6]=  $1 + \frac{x^3}{6} + \frac{x^6}{180} + \frac{x^9}{12960} + \frac{x^{12}}{1710720} + \frac{x^{15}}{359251200} + \frac{x^{18}}{109930867200}$ 
```

```
In[7]:= Plot[Evaluate[
Table[Airy[n], {n, {1, 3, 9, 27, 81}}]
], {x, -10, 3}, PlotRange -> {-1.5, 3.5}]
```

