```
(** ANALISI DEGLI ERRORI **)

r = Sqrt[3.]
r^2 - 3
```

```
1.73205
```

```
-4.44089 × 10^-16
```

```
r = N[Sqrt[3], 4]
r^2 - 3
```

```
1.732
```

```
0. × 10^-4
```

```
Clear[a, b, c];
a = 1;
b = 74.23;
c = 1;
sol = Solve[a * x^2 + b * x + c == 0, x]
x1 = N[x /. sol[[1]], 16]
x2 = N[x /. sol[[2]], 16]
```

```
{{x → -74.2165}, {x → -0.0134741}}
```

```
-74.2165
```

```
-0.0134741
```

```
b^2 - 4. * a * c
Sqrt[b^2 - 4. * a * c]
```

```
5506.09
```

```
74.2031
```

```
Clear[a, b, c];
a = N[1, 4];
b = N[10, 4];
c = N[1 / 1000, 4];
Solve[a * x^2 + b * x + c == 0, x]
```

```
{{x → -10.00}, {x → -0.0001000}}
```

```
a
b
c
```

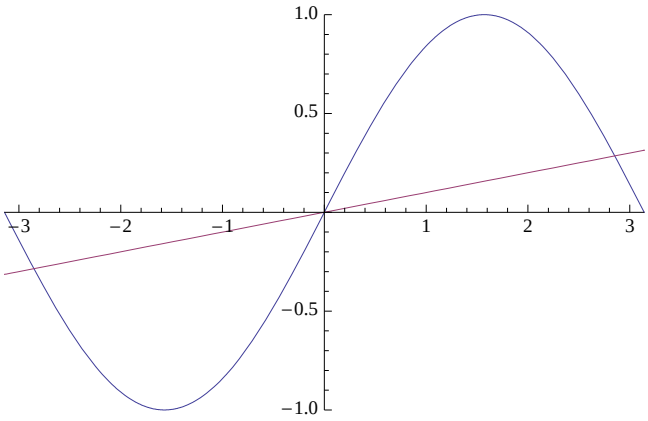
```
1.000
```

```
10.00
```

```
0.001000
```

```
(** EQUAZIONI NONLINEARI **)
```

```
Clear[f, g, a, a0];
f[x_] := Sin[x];
g[x_] := a * x;
a0 = 0.1;
Plot[{f[x], g[x] /. a → a0}, {x, -Pi, Pi}, PlotRange → {{-Pi, Pi}, {-1, 1}}]
```



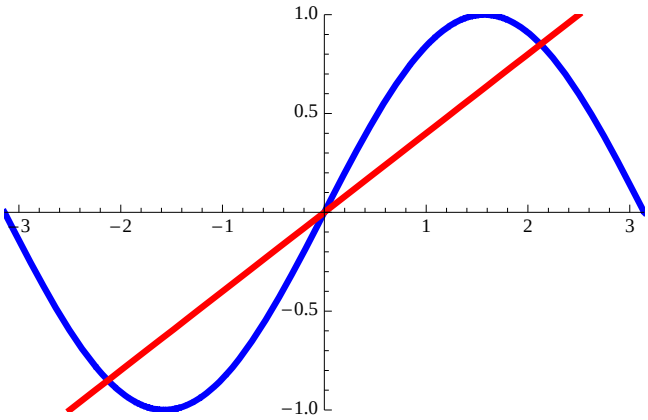

```
Clear[ff, a0];
ff[1][x_] := f[x];
Do[a0 = (i - 1) * 0.4; ff[i][x_] = g[x] /. a → a0, {i, 2, 5}]
```

```
ff[3][x]
```

```
0.8 x
```

```
a0 = 0.;
i = 1;
While[a0 ≤ 2., {pl[i] = Plot[{f[x], g[x] /. a → a0}, {x, -Pi, Pi},
     PlotRange → {{-Pi, Pi}, {-1, 1}}, PlotStyle -> {{RGBColor[0, 0, 1], Thickness[0.01]},
       {RGBColor[1, 0, 0], Thickness[0.01]}}]; i += 1; a0 += 0.4];
```

```
Show[pl[2]]
```



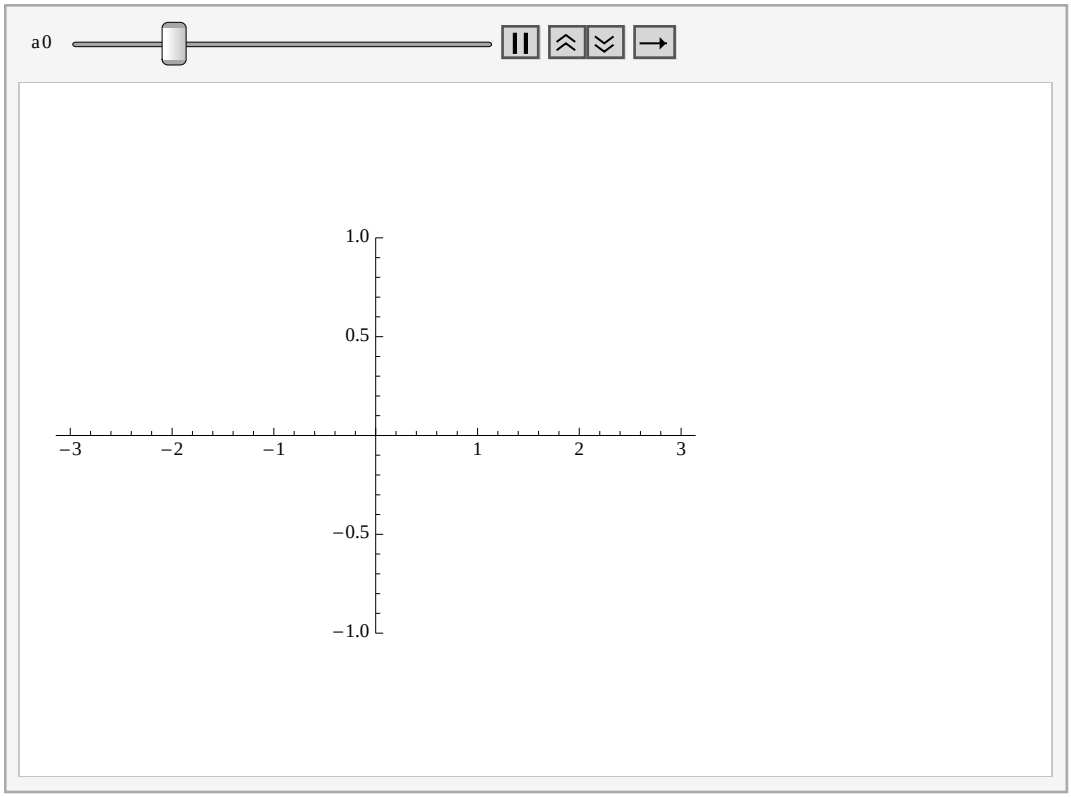

```
a0
```

```
2.4
```

```
i
```

```
7
```

```
Clear[a0];
Animate[
 Plot[{f[x], g[x] /. a → a0}, {x, -Pi, Pi}, PlotRange → {{-Pi, Pi}, {-1, 1}}, PlotStyle ->
   {{RGBColor[0, 0, 1], Thickness[0.01]}, {RGBColor[1, 0, 0], Thickness[0.01]}}], {a0, 0, 2}]
```




```
Clear[f, g];
f[x_] := Exp[-x];
g[x_] := x^3;
Plot[{f[x], g[x]}, {x, 0, 2}, PlotRange → {0, 2},
 PlotStyle → {{RGBColor[0, 0, 1], Thickness[0.01]}, {RGBColor[1, 0, 0], Thickness[0.01]}}]
```