

```
> restart;
> f:=x->exp(x)-2+x;
f:=x→ex-2+x (1)
```

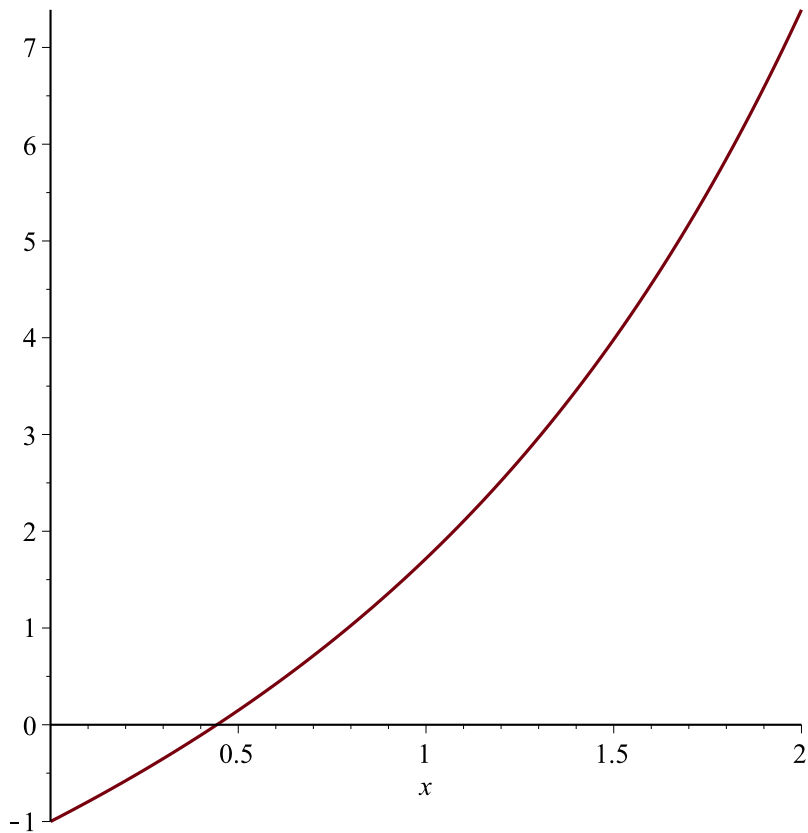
```
> D(f);
x→ex+1 (2)
```

```
> g:=x->x-f(x)/D(f)(x);
g:=x→x- $\frac{f(x)}{D(f)(x)}$  (3)
```

```
> x0:=1.0;
x0:=1.0 (4)
```

```
> x1:=g(x0);
x1:=0.5378828428 (5)
```

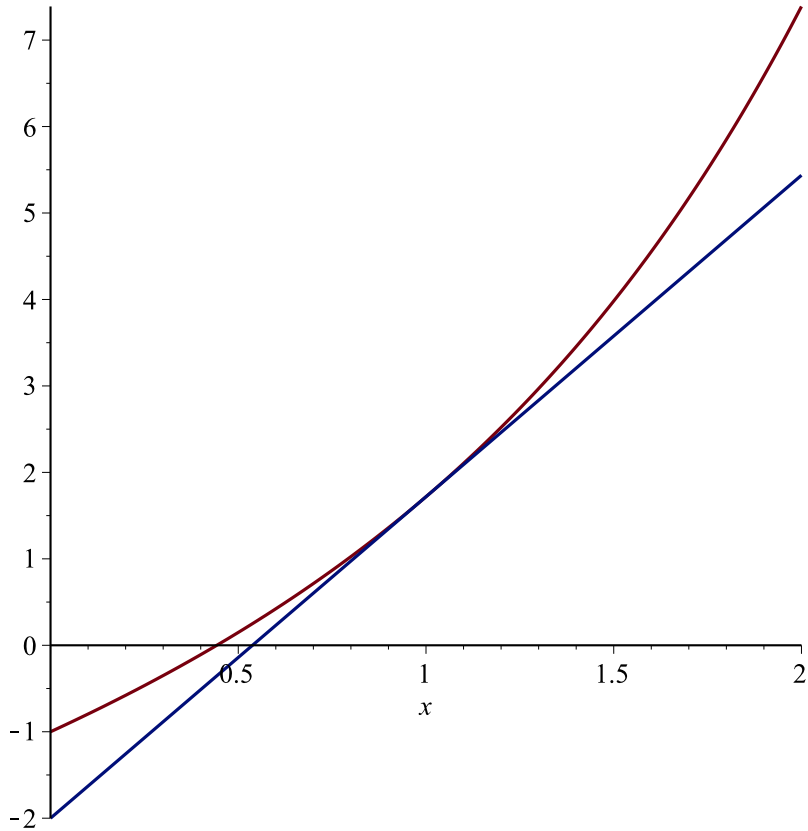
```
> plot(f(x),x=0..2);
```



```
> line:=y-f(x0)=D(f)(x0)*(x-x0);
line:=y-1.718281828=3.718281828x-3.718281828 (6)
```

```
> a:=solve(line,y);
a:=3.718281828x-2. (7)
```

```
> plot([f(x), a], x=0..2);
```



```
> x1:=g(x0);
```

```
x1 := 0.5378828428
```

(8)

```
> x2:=g(x1);
```

```
x2 := 0.4456167486
```

(9)

```
> x3:=g(x2);
```

```
x3 := 0.4428567246
```

(10)

```
> x4:=g(x3);
```

```
x4 := 0.4428544011
```

(11)

```
> x5:=g(x4);
```

```
x5 := 0.4428544011
```

(12)

```
> Digits:=60;
```

```
Digits := 60
```

(13)

```
> x0:=1.0;
```

```
x0 := 1.0
```

(14)

```
> x1:=g(x0);
```

```
x1 := 0.537882842739990241497681516356327451269710719669886961447268
```

(15)

```
> x2:=g(x1);
```

```
x2 := 0.445616748526545207547528902612745982969999242008690281606876
```

(16)

> **x3:=g(x2) ;**  
x3 := 0.442856724645110024462178068763399292854338087024604032495743 (17)

> **x4:=g(x3) ;**  
x4 := 0.442854401004032510161884224432351205451191338158030247617291 (18)

> **x5:=g(x4) ;**  
x5 := 0.442854401002388583141328822826912716489826670759517311346301 (19)

> **x6:=g(x5) ;**  
x6 := 0.442854401002388583141327999999336819716262129373685824326000 (20)

> **x7:=g(x6) ;**  
x7 := 0.442854401002388583141327999999336819716262129373479684717733 (21)

> **x8:=g(x7) ;**  
x8 := 0.442854401002388583141327999999336819716262129373479684717732 (22)