```
> restart:
```

```
> f:=(1-cos(x))/(x^(2/3));
```

$$f := \frac{1 - \cos(x)}{x^{(2/3)}}$$

```
> series(f,x=0);
```

$$\frac{x^{(4/3)}}{2} - \frac{x^{(10/3)}}{24} + O(x^{(16/3)})$$

```
> g:=diff(f,x);series(g,x=0);
```

$$g := \frac{\sin(x)}{x^{(2/3)}} - \frac{2}{3}\frac{1 - \cos(x)}{x^{(5/3)}}$$

$$\frac{2\,x^{(1/3)}}{3} - \frac{5\,x^{(7/3)}}{36} + O(x^{(13/3)})$$

```
> h:=diff(g,x);series(h,x=0);
```

$$h := \frac{\cos(x)}{x^{(2/3)}} - \frac{4}{3}\frac{\sin(x)}{x^{(5/3)}} + \frac{10}{9}\frac{1 - \cos(x)}{x^{(8/3)}}$$

$$\frac{2}{9\,x^{(2/3)}} - \frac{35\,x^{(4/3)}}{108} + O(x^{(10/3)})$$

```
> i:=int(f^2-g^2+h^2,x=1..t):evalf(subs(t=1.1,i));plot(i,t=1..2);
```

$$-0.003581879969$$