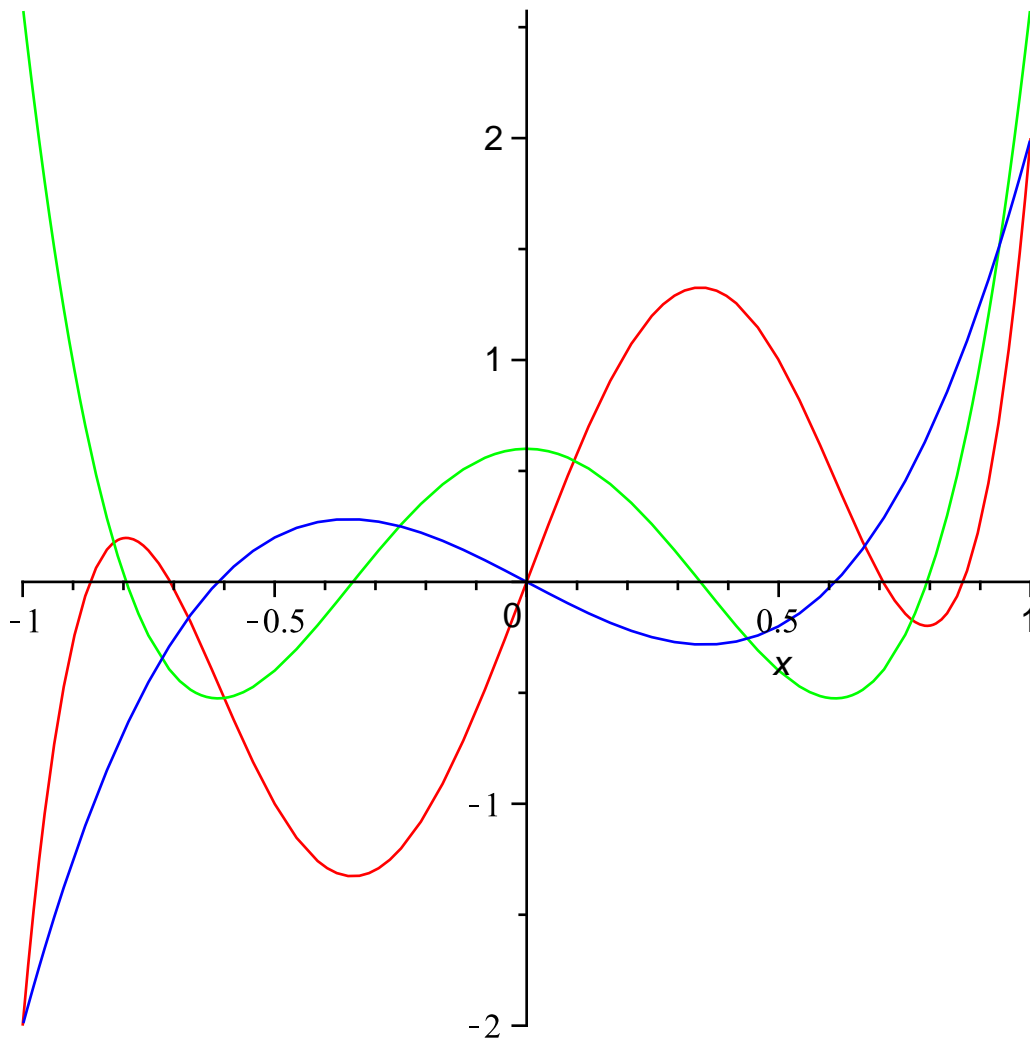```
> f:= cos(5*arccos(x))+x;
```
$$f := \cos(5\arccos(x)) + x \qquad \textbf{(1)}$$

```
> plot([f,(1/10)*diff(f,x),(1/100)*diff(f,x$2)],x=-1..1,color=
  [red,green,blue]);
```



```
> df := expand(diff(f,x));
```
$$df := 80\,x^4 - 60\,x^2 + 6 \qquad \textbf{(2)}$$

```
> soldf:=solve(df=0,x);
```
$$soldf := -\frac{1}{20}\sqrt{150 + 10\sqrt{105}},\ \frac{1}{20}\sqrt{150 + 10\sqrt{105}},\ -\frac{1}{20}\sqrt{150 - 10\sqrt{105}}, \qquad \textbf{(3)}$$
$$\frac{1}{20}\sqrt{150 - 10\sqrt{105}}$$

```
> for x0 in [soldf] do
    evalf(subs(x=x0,diff(f,x$2)));
  od;
```
$$-65.12670527$$
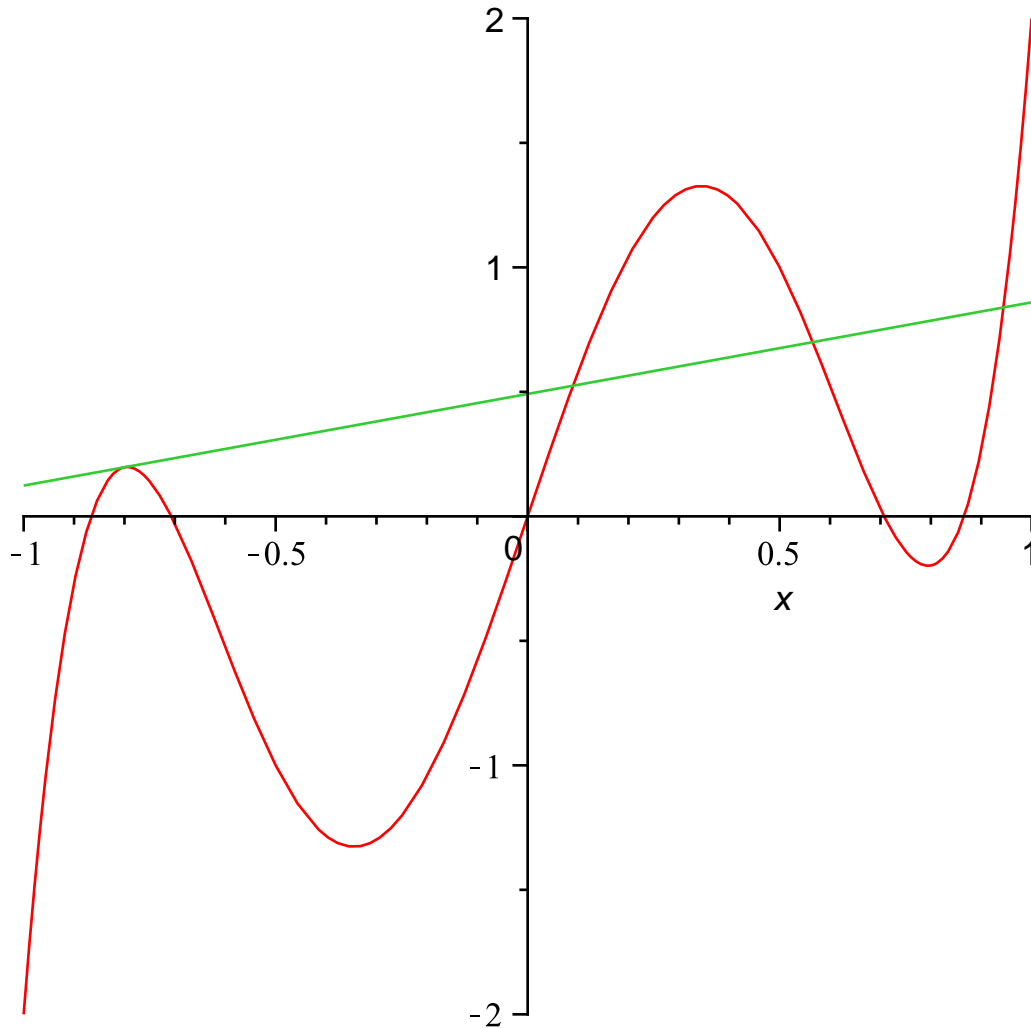$$65.12670522$$
$$28.25795943$$

$$-28.25795945 \tag{4}$$

```
> # Minima bei soldf[2] und soldf[3]
  # Maxima bei soldf[1] und soldf[4]
> h:= subs(x=-8/10,f) + subs(x=-8/10,df)*(x+8/10);
```

$$h := \cos\left(5 \arccos\left(-\frac{4}{5}\right)\right) - \frac{316}{625} + \frac{46}{125}\, x \tag{5}$$

```
> plot([f,h],x=-1..1);
```



```
> s:=solve(f=h,x): #Schnittpunkte
> evalf(simplify(evalc([s])));
```

$$[-0.8000000000, 0.9443257368, 0.5658439944, 0.0898302688] \tag{6}$$