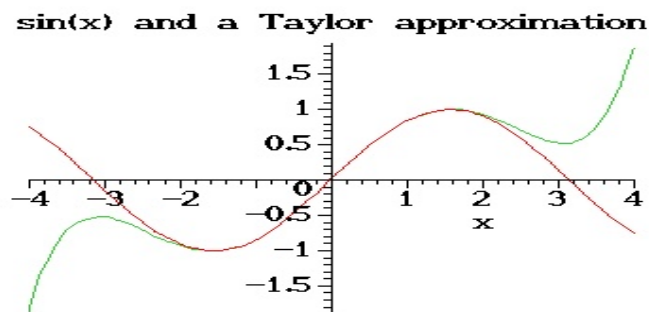


## Maple test

Here is some Maple code to do a plot:

```
Maple> plot({sin(x), x-x^3/6+x^5/120}, x=-4..4, title=`sin(x) and a Taylor approximation`);
```



Here is a messy expression and its messier derivative

```
Maple> a := sin(x) * x^(x^x);
Maple> diff(a, x);
```

$$a := \sin(x) x^{\frac{x}{(x)^x}}$$

$$\cos(x) x^{\frac{x}{(x)^x}} + \sin(x) x^{\frac{x}{(x)^x}} \left| x^{\frac{x}{(x)^x}} (\ln(x) + 1) \ln(x) + \frac{x^x}{x} \right|$$

We can display these results in a more refined way: Suppose that  $a = \sin(x)x^{x^x}$ ; then

$$\frac{\partial a}{\partial x} = \cos(x)x^{x^x} + \sin(x)x^{x^x} \left( x^x (\ln(x) + 1) \ln(x) + \frac{x^x}{x} \right) \quad (1)$$