Weierstrass' continuous nowhere differentiable function

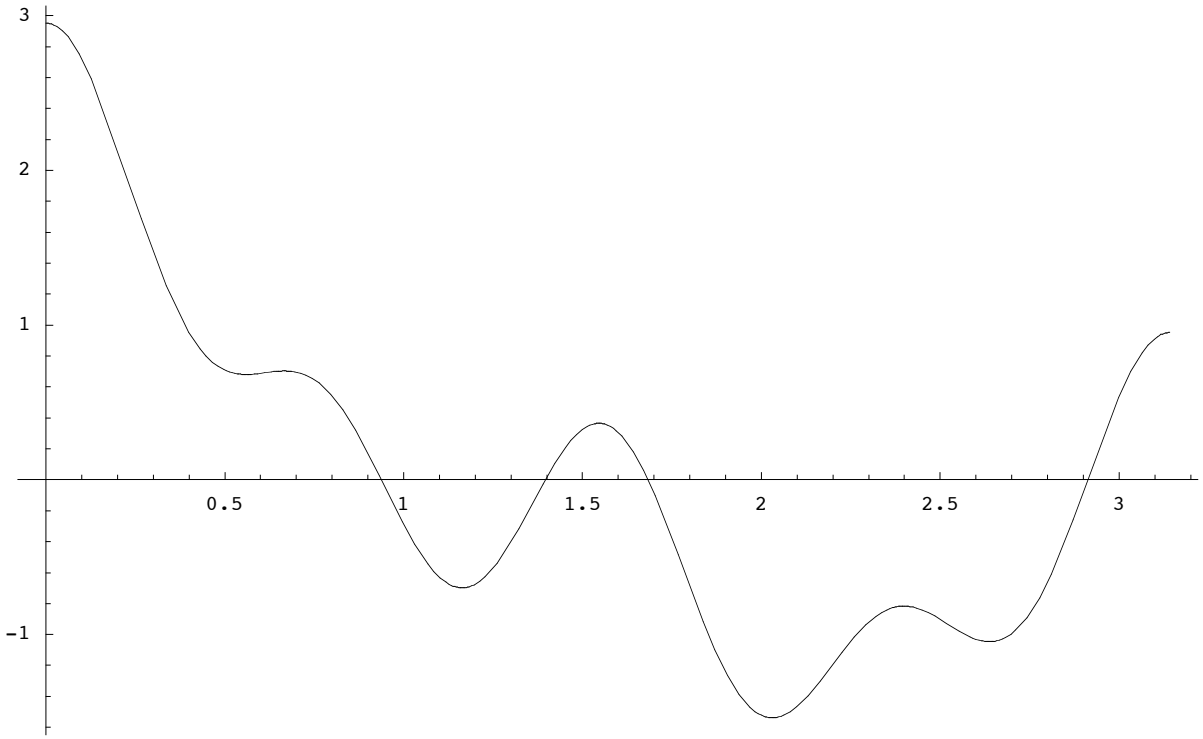
Partial Sum Approximations to Weierstrass' Function with b=0.8 and m=2 on [0,π].

■ Definition of the partial sum of first n+1 terms.

```
In[14]:= h[x_, n_] := Sum[(.8)^k * Cos[2^k * x], {k, 0, n}]
```

Graph of sum of first 4 terms

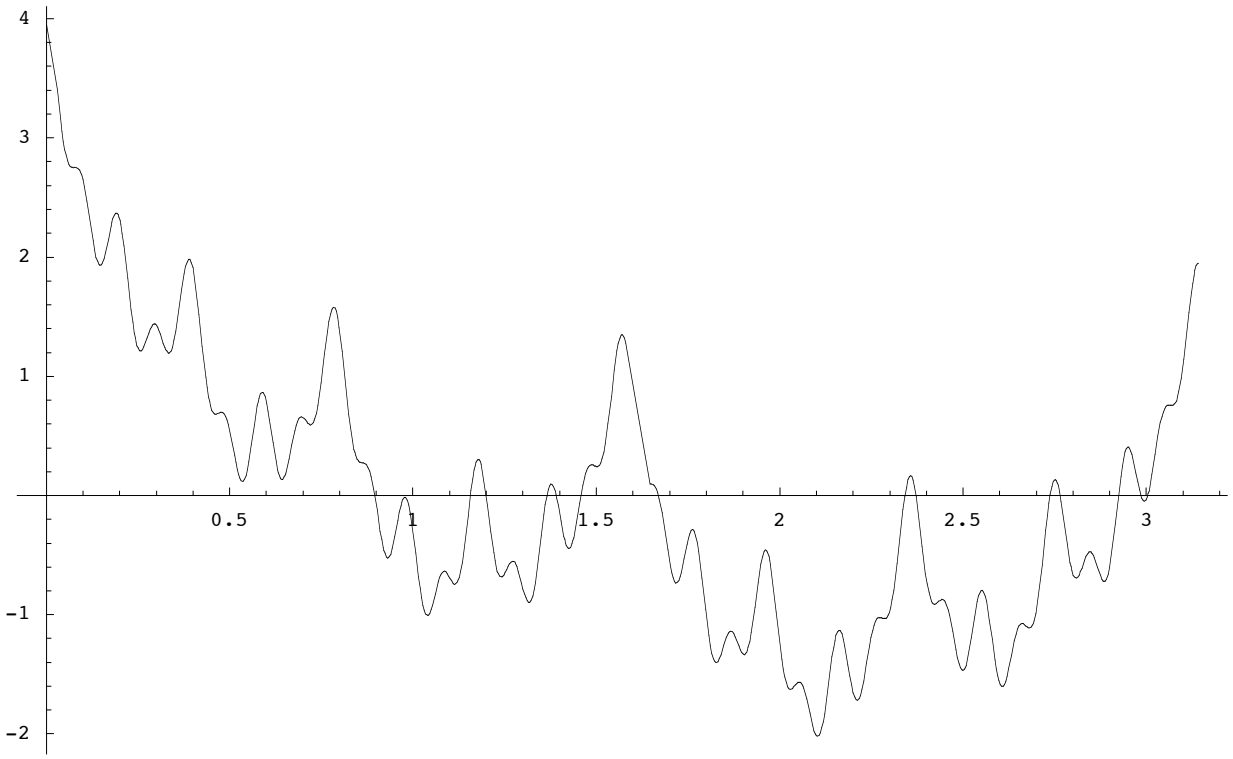
```
In[18]:= Plot[h[x, 3], {x, 0, Pi}]
```




```
Out[18]= - Graphics -
```

Graph of sum of first 7 terms

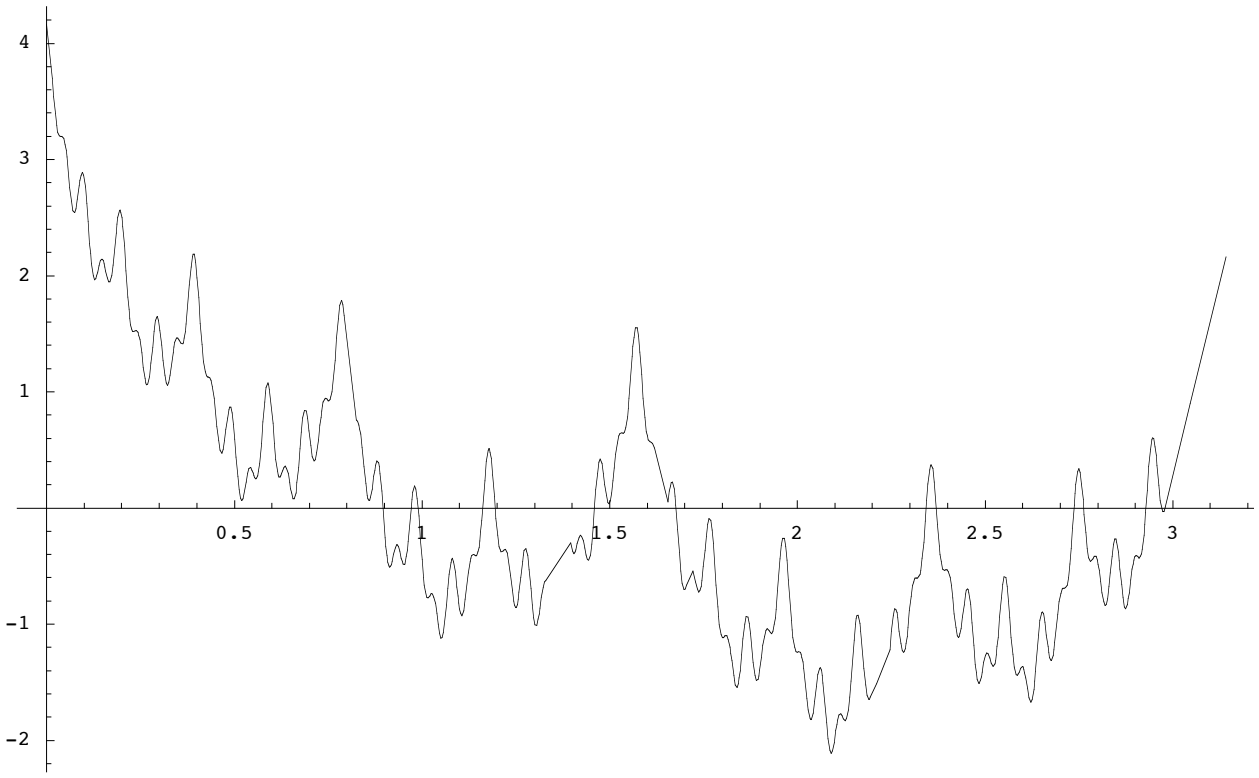
In[20]:= **Plot[h[x, 6], {x, 0, Pi}]**



Out[20]= **-** Graphics **-**

Graph of sum of first 8 terms

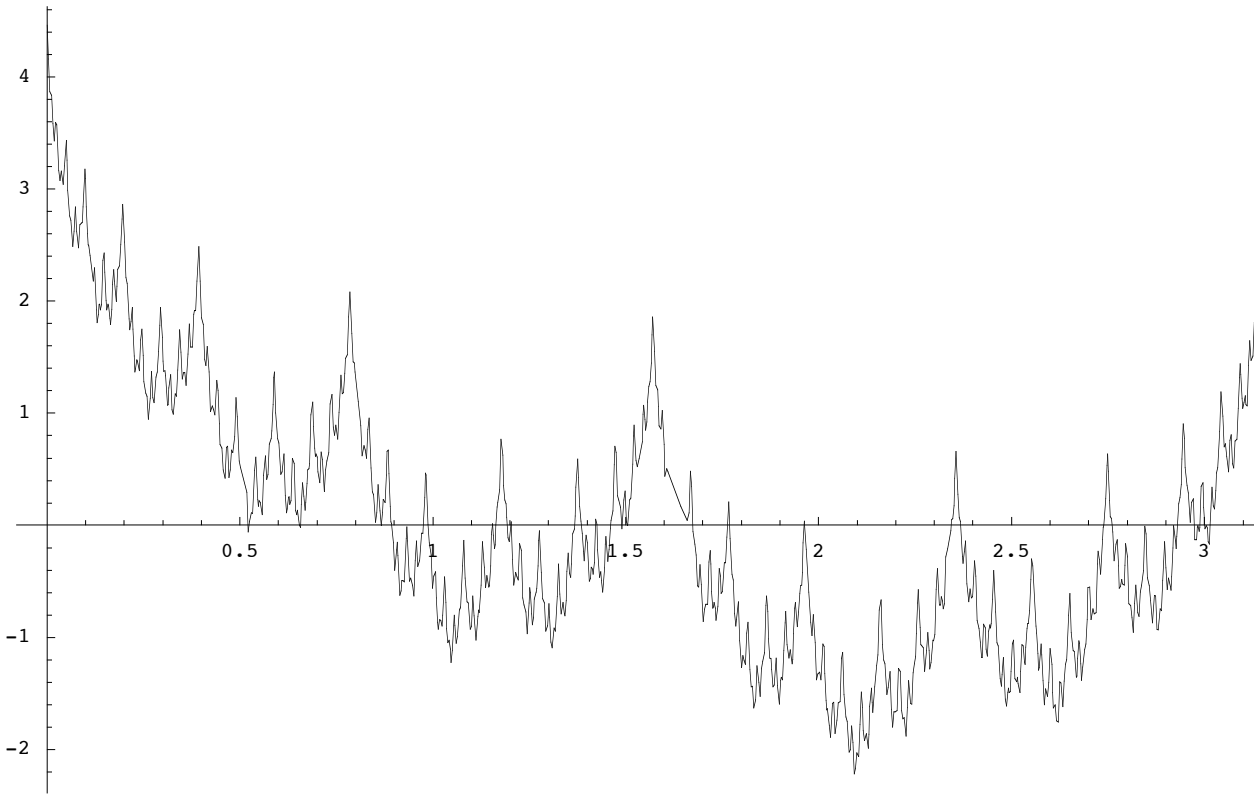
In[22]:= **Plot[h[x, 7], {x, 0, Pi}]**



Out[22]= **-** Graphics **-**

Graph of sum of first 10 terms

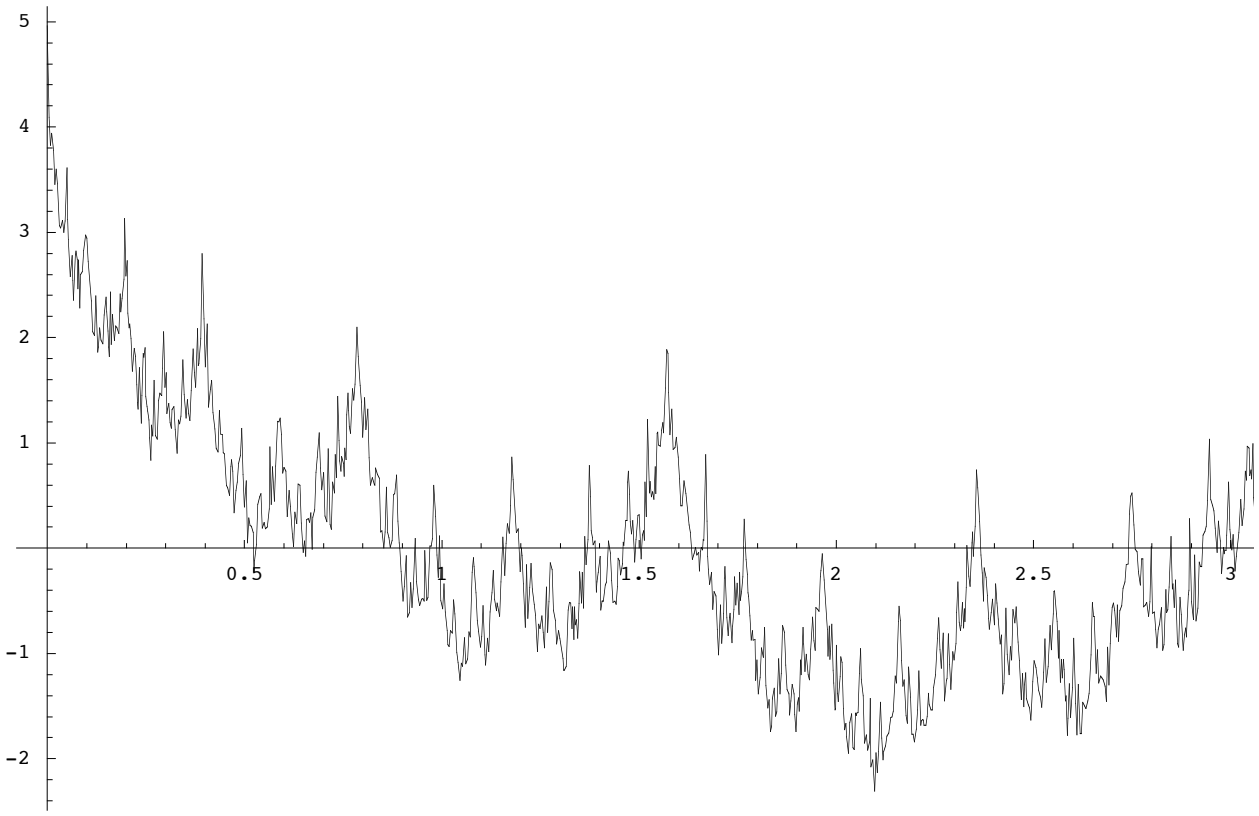
In[21]:= **Plot[h[x, 9], {x, 0, Pi}]**



Out[21]= **-** Graphics **-**

Graph of sum of first 31 terms

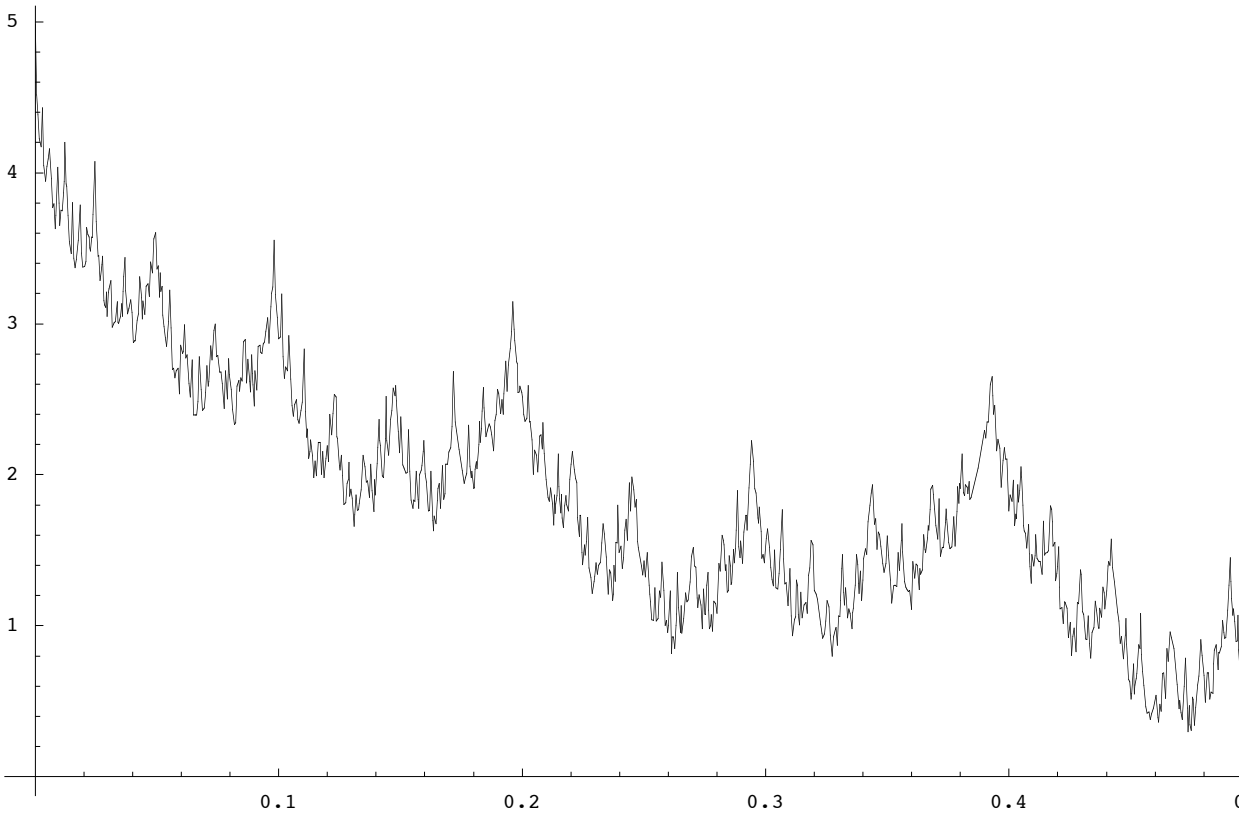
In[25]:= **Plot[h[x, 30], {x, 0, Pi}]**



Out[25]= **-** Graphics **-**

Graph of sum of first 31 terms for 0 ≤ x ≤ 0.5

In[27]:= **Plot[h[x, 30], {x, 0, .5}]**



Out[27]= **- Graphics -**