

$$\begin{aligned}
Q(x) = & -\frac{31}{51}x^{51} + \frac{93}{10}x^{50} - \frac{4495}{49}x^{49} + \frac{31465}{48}x^{48} - \frac{169911}{47}x^{47} + \frac{736281}{46}x^{46} - 58435x^{45} \\
& + \frac{7888725}{44}x^{44} - \frac{20160075}{43}x^{43} + \frac{14784055}{14}x^{42} - \frac{84672315}{41}x^{41} + \frac{28224105}{8}x^{40} - \frac{68751025}{13}x^{39} \\
& + \frac{13956975}{2}x^{38} - \frac{300540195}{37}x^{37} + \frac{33393355}{4}x^{36} - \frac{53036505}{7}x^{35} + \frac{206253075}{34}x^{34} - \frac{47040175}{11}x^{33} \\
& + \frac{84672315}{32}x^{32} - 1430715x^{31} + \frac{1344005}{2}x^{30} - 272025x^{29} + \frac{2629575}{28}x^{28} - \frac{81809}{3}x^{27} + \frac{169911}{26}x^{26} \\
& - \frac{6293}{5}x^{25} + \frac{4495}{24}x^{24} - \frac{465}{23}x^{23} + \frac{31}{22}x^{22} - \frac{1}{21}x^{21} + \frac{1}{52}x^{52}
\end{aligned}$$

H:=diff(Q,x);

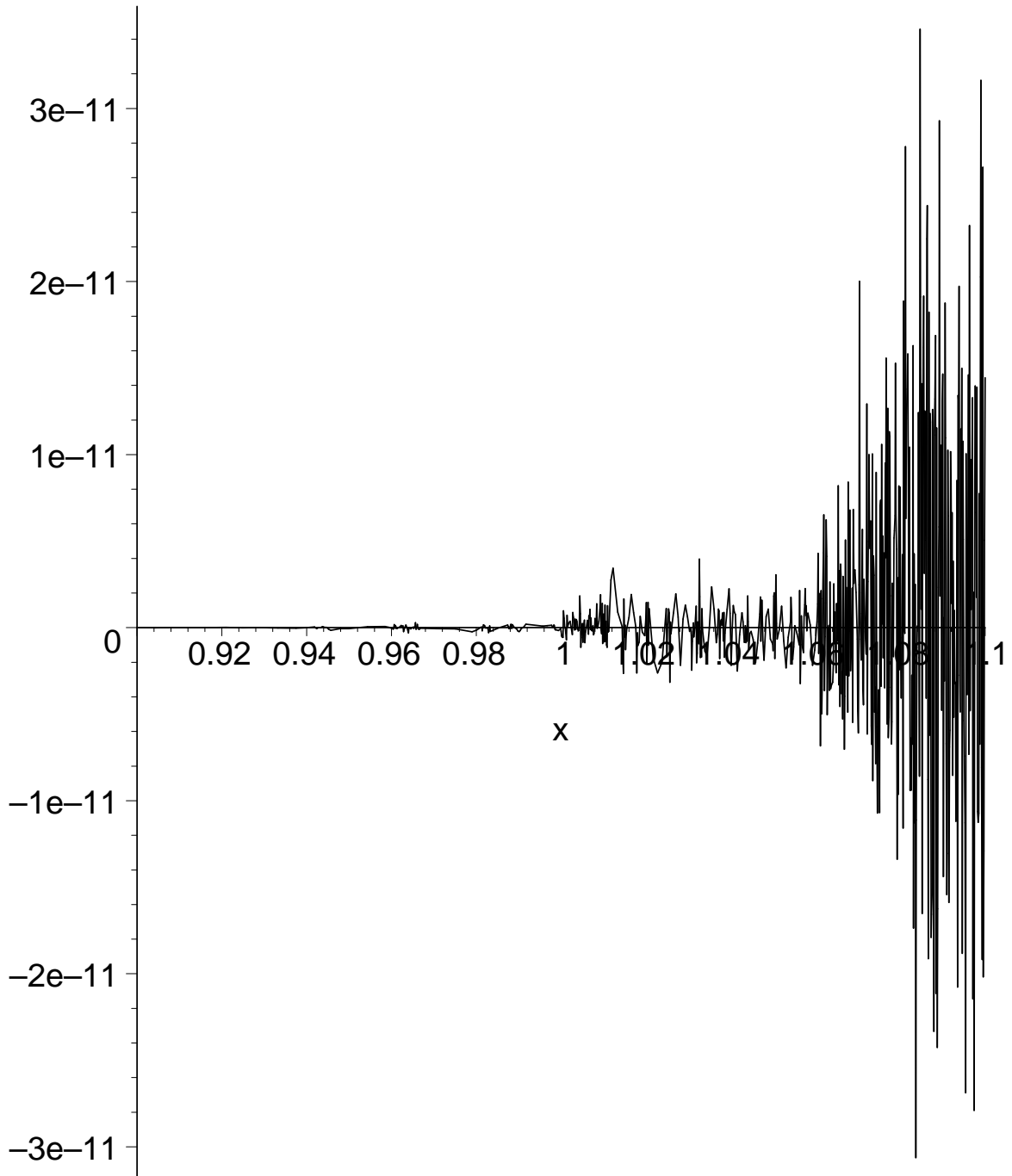
$$\begin{aligned}
H(x) = & -x^{20} + x^{51} - 31x^{50} + 465x^{49} - 4495x^{48} + 31465x^{47} - 169911x^{46} + 736281x^{45} - 2629575x^{44} \\
& + 7888725x^{43} - 20160075x^{42} + 44352165x^{41} - 84672315x^{40} + 141120525x^{39} - 206253075x^{38} \\
& + 265182525x^{37} - 300540195x^{36} + 300540195x^{35} - 265182525x^{34} + 206253075x^{33} - 141120525x^{32} \\
& + 84672315x^{31} - 44352165x^{30} + 20160075x^{29} - 7888725x^{28} + 2629575x^{27} - 736281x^{26} + 169911x^{25} \\
& - 31465x^{24} + 4495x^{23} - 465x^{22} + 31x^{21}
\end{aligned}$$

factor(H);

$$x^{20}(x-1)^{31}$$

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Digits:=20;
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```
plot(Q,x=.9..1.1);
```



```
plot(H,x=.9..1.1);
```

