テーラー展開のグラフ　：　$y = f(x) = e^x$ の場合

$f(x) = e^x$

$f_n(x) = \sum_{k=0}^{n} \frac{f^{(k)}(0)}{k!} x^k$　：　$f(x)$ のテーラー展開（級数）の x の べき が 0 乗から n 乗までの項の和。

具体的な形は：

$f_1(x) = 1 + x$

$f_2(x) = 1 + x + \frac{1}{2}x^2$

$f_3(x) = 1 + x + \frac{1}{2}x^2 + \frac{1}{6}x^3$

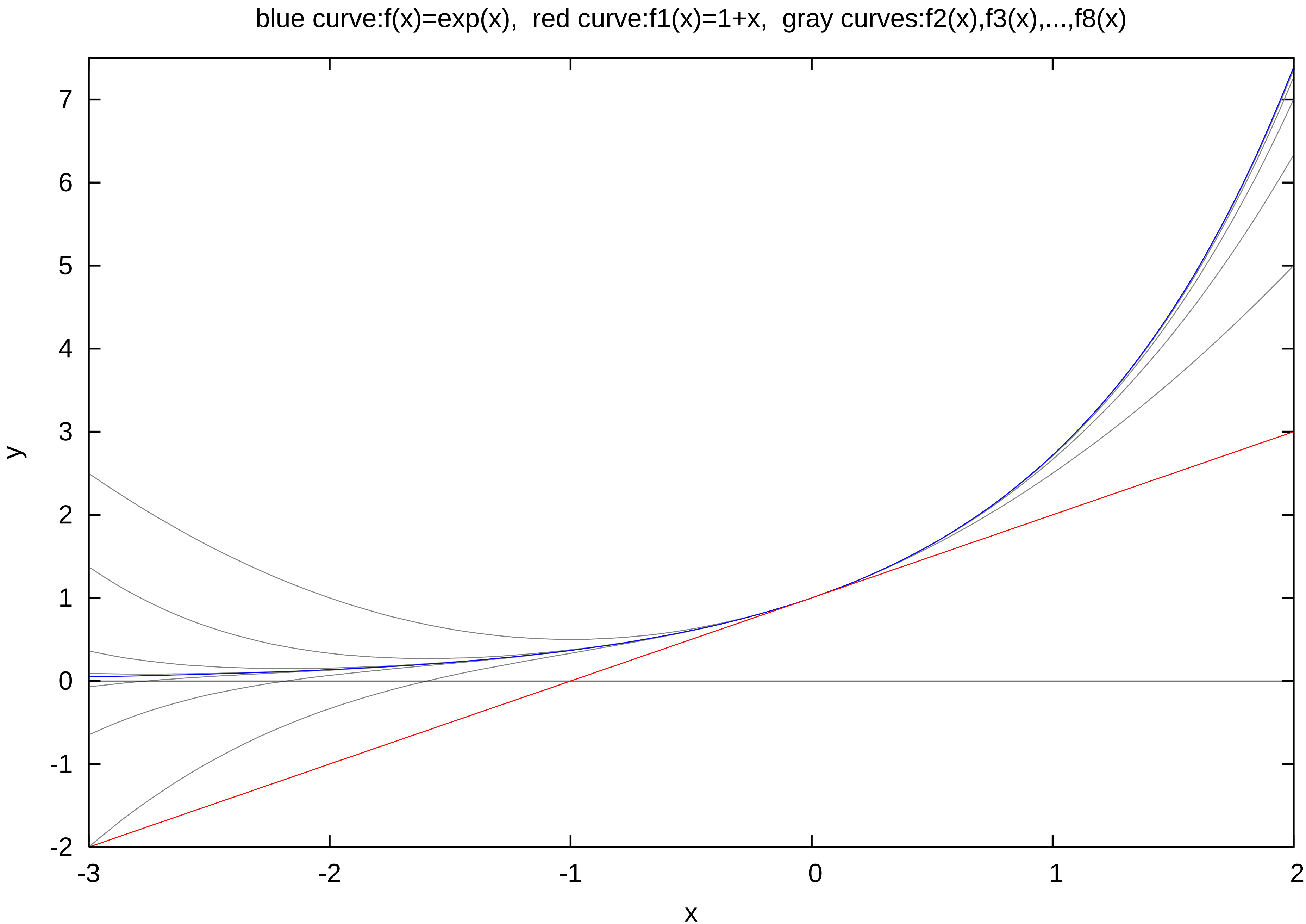
$f_4(x) = 1 + x + \frac{1}{2}x^2 + \frac{1}{6}x^3 + \frac{1}{24}x^4$

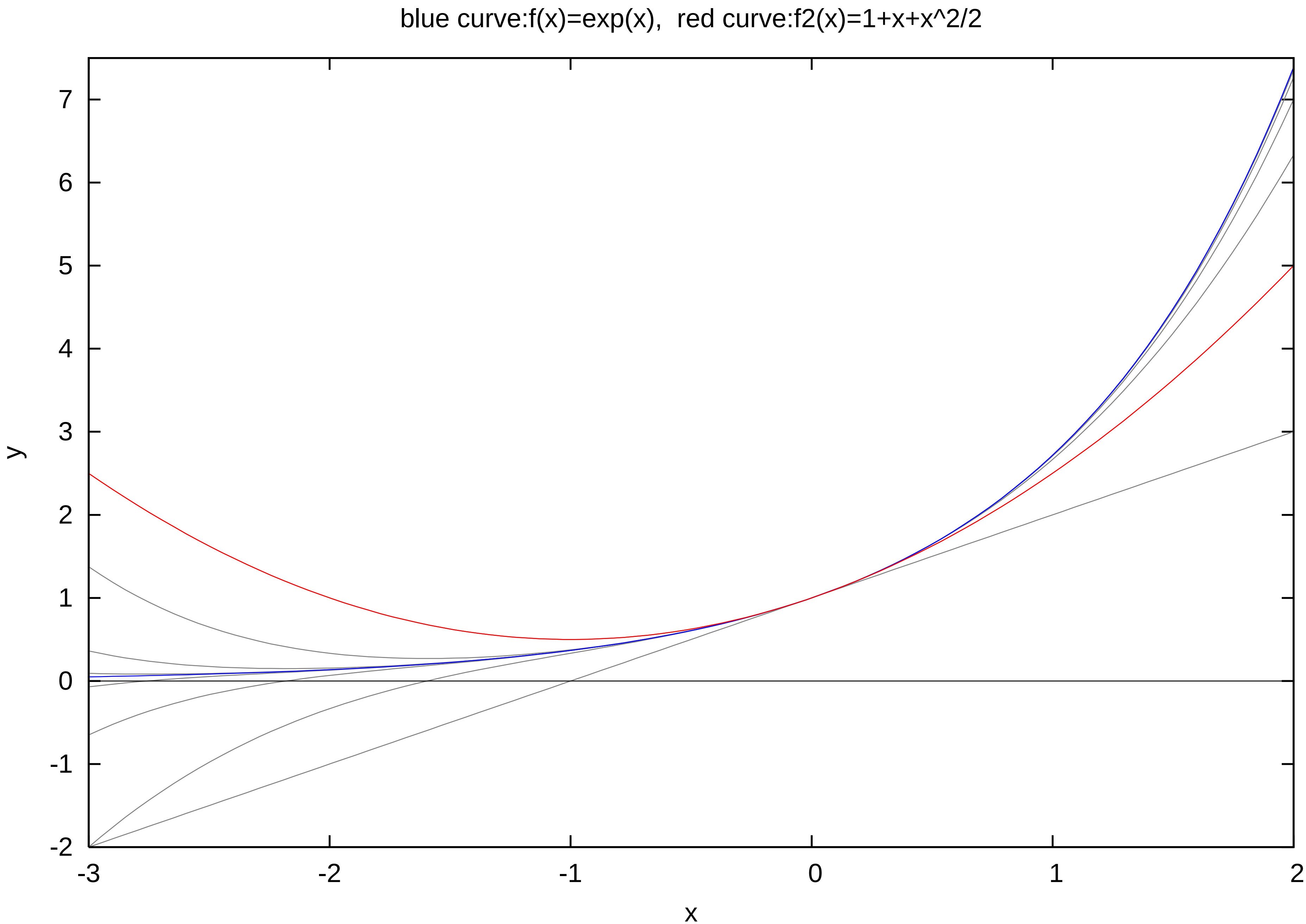
$f_5(x) = 1 + x + \frac{1}{2}x^2 + \frac{1}{6}x^3 + \frac{1}{24}x^4 + \frac{1}{120}x^5$

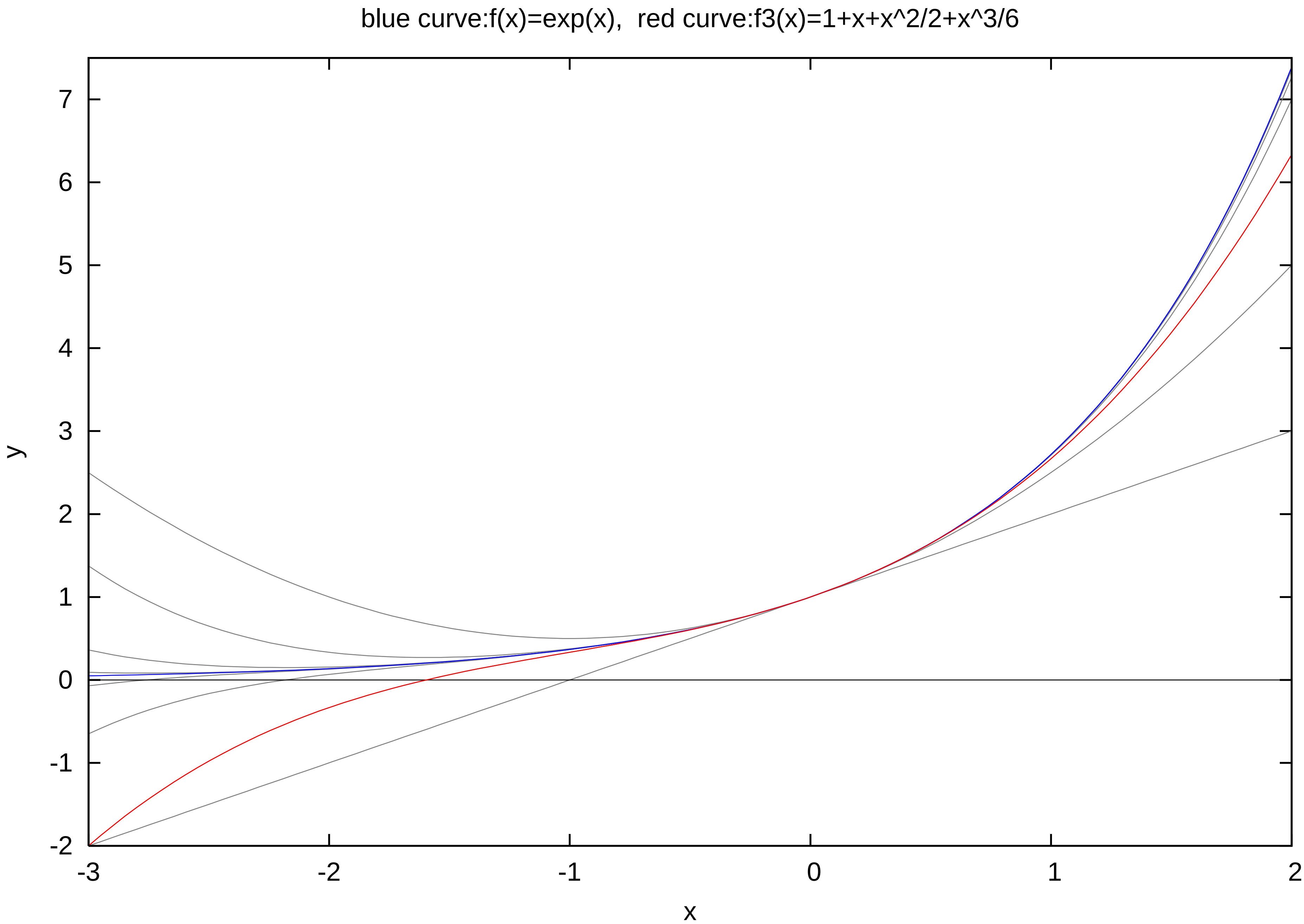
$f_6(x) = 1 + x + \frac{1}{2}x^2 + \frac{1}{6}x^3 + \frac{1}{24}x^4 + \frac{1}{120}x^5 + \frac{1}{720}x^6$

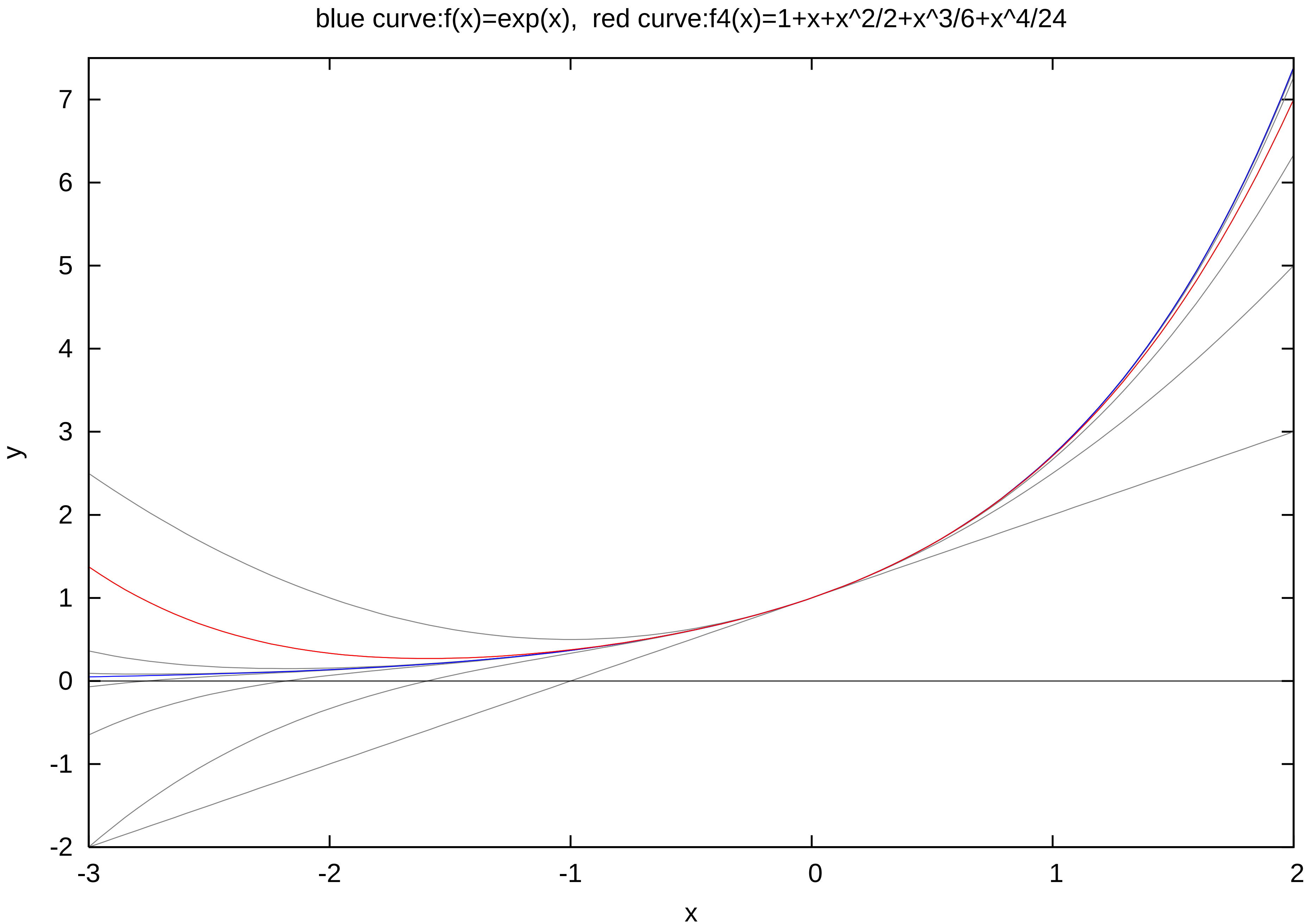
$f_7(x) = 1 + x + \frac{1}{2}x^2 + \frac{1}{6}x^3 + \frac{1}{24}x^4 + \frac{1}{120}x^5 + \frac{1}{720}x^6 + \frac{1}{5040}x^7$

$\cdots$

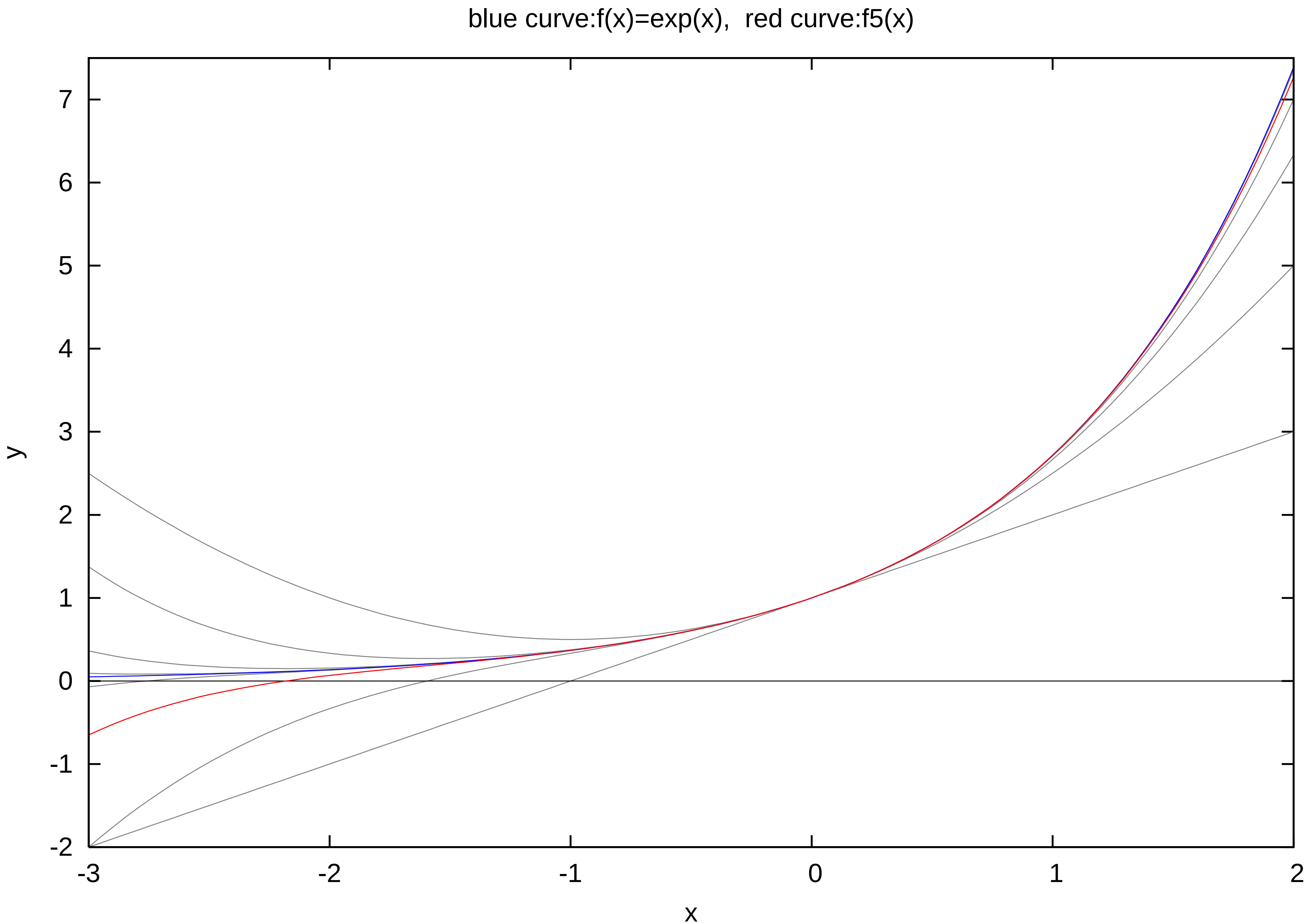

blue curve:f(x)=exp(x), red curve:f1(x)=1+x, gray curves:f2(x),f3(x),...,f8(x)
y
7
6
5
4
3
2
1
0
-1
-2
-3
-2
-1
0
1
2
x

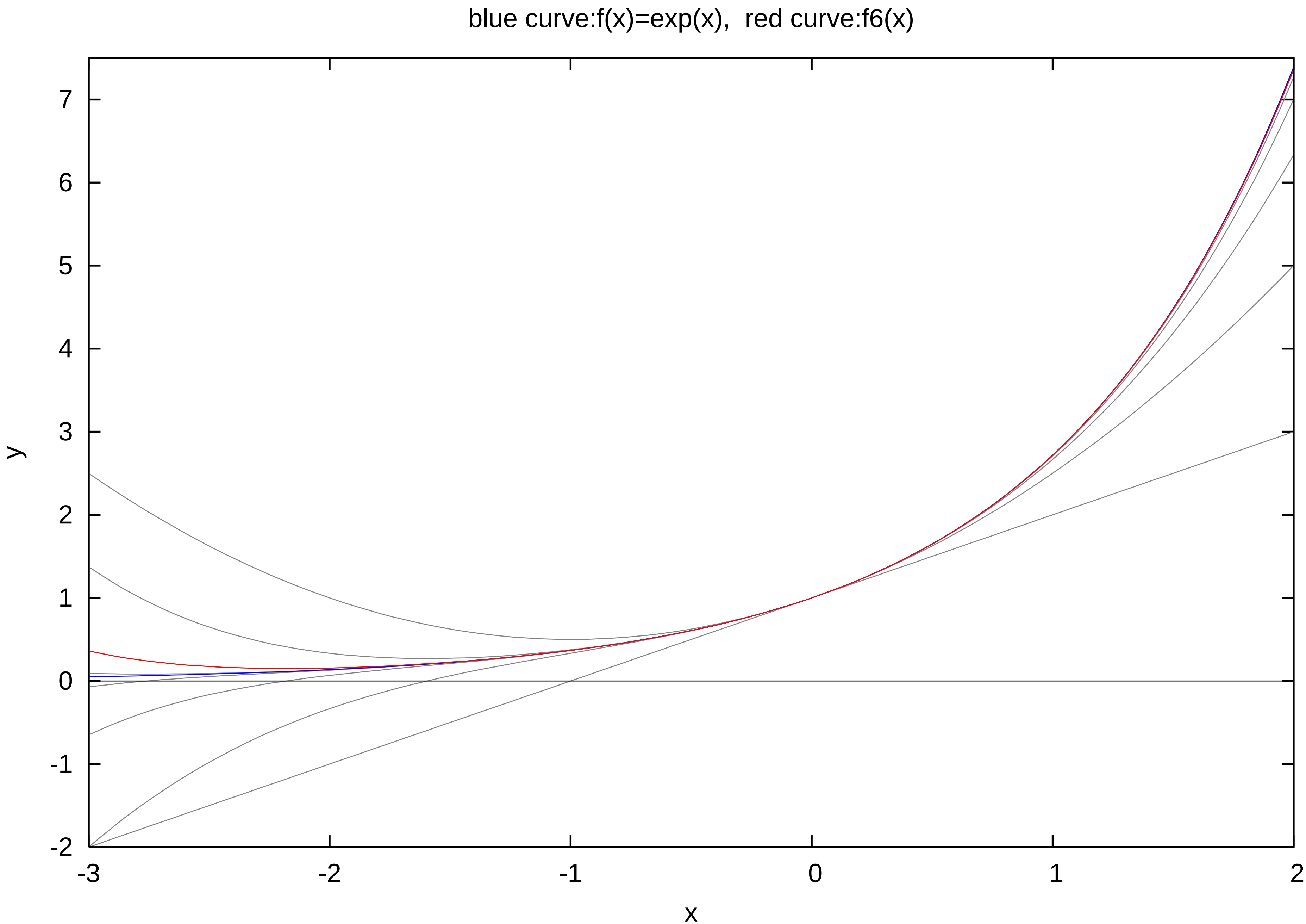

blue curve:f(x)=exp(x), red curve:f2(x)=1+x+x^2/2
y
x
7
6
5
4
3
2
1
0
-1
-2
-3
-2
-1
0
1
2


blue curve:f(x)=exp(x), red curve:f3(x)=1+x+x^2/2+x^3/6
y
x
7
6
5
4
3
2
1
0
-1
-2
-3
-2
-1
0
1
2

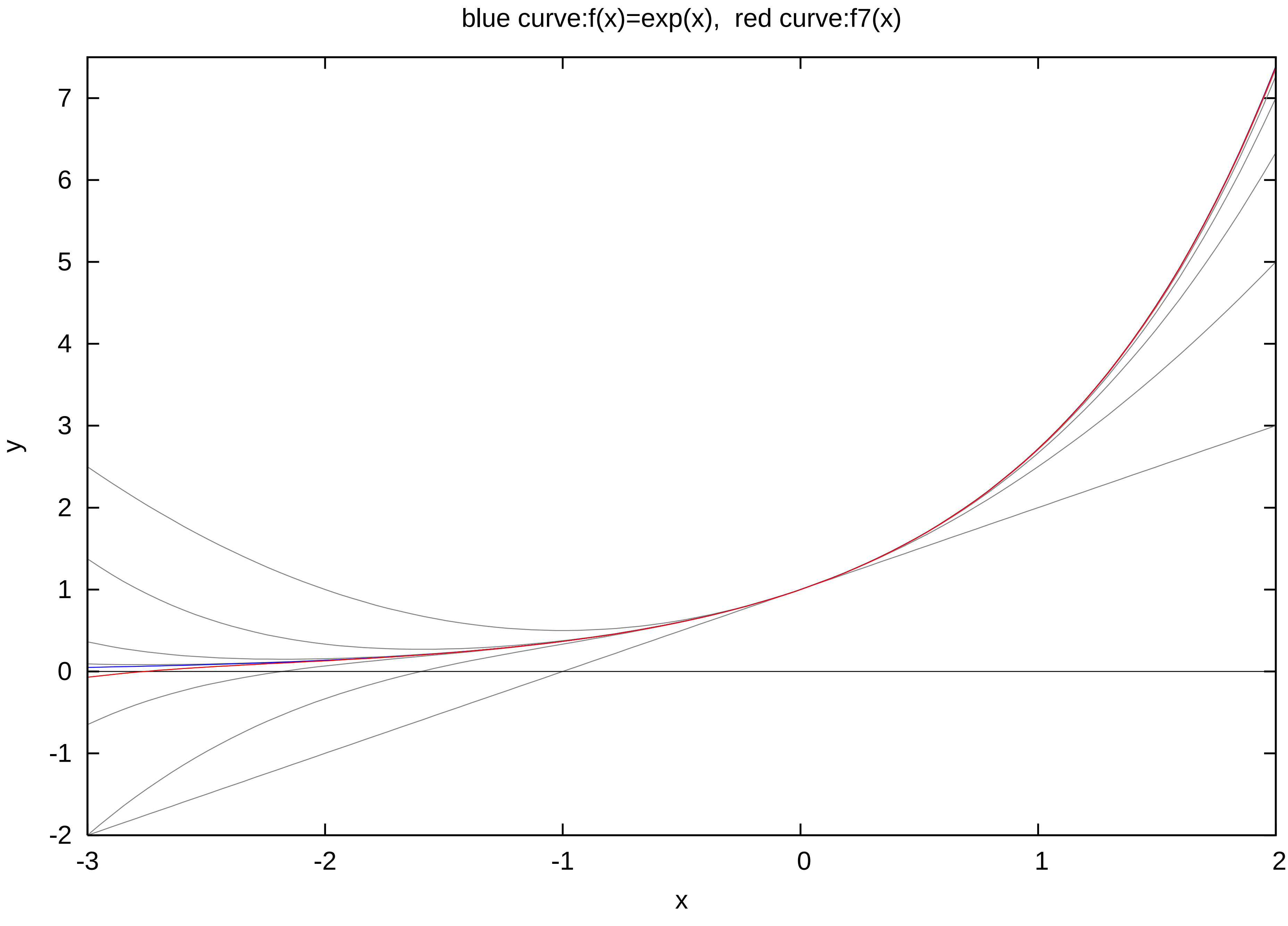


blue curve:f(x)=exp(x), red curve:f4(x)=1+x+x^2/2+x^3/6+x^4/24
y
7
6
5
4
3
2
1
0
-1
-2
-3
-2
-1
0
1
2
x

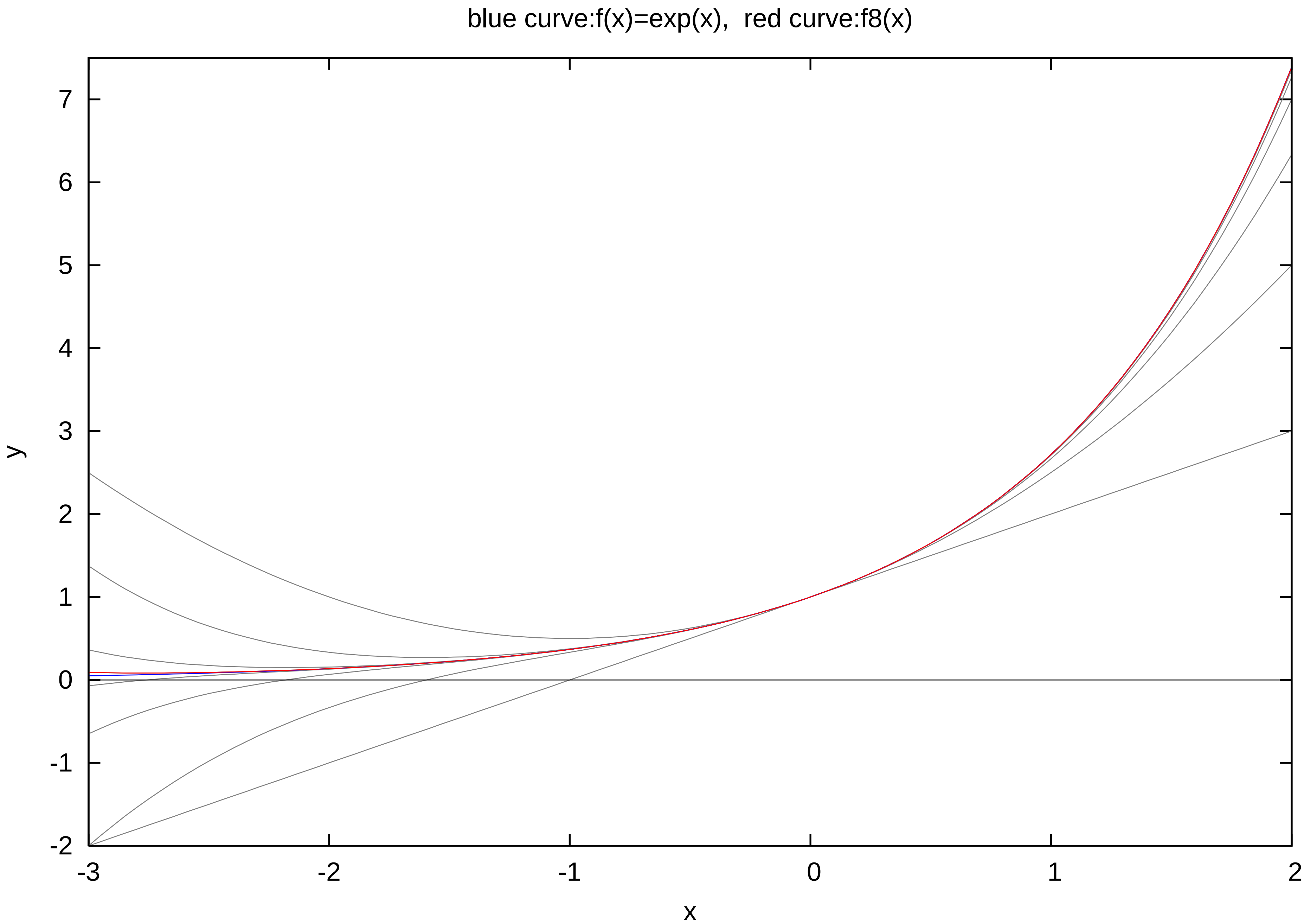

blue curve:f(x)=exp(x), red curve:f5(x)
y
7
6
5
4
3
2
1
0
-1
-2
-3
-2
-1
0
1
2
x



blue curve:f(x)=exp(x), red curve:f6(x)
y
7
6
5
4
3
2
1
0
-1
-2
-3
-2
-1
0
1
2
x



blue curve:f(x)=exp(x), red curve:f7(x)
y
7
6
5
4
3
2
1
0
-1
-2
-3
-2
-1
0
1
2
x


blue curve:f(x)=exp(x), red curve:f8(x)
y
x
7
6
5
4
3
2
1
0
-1
-2
-3
-2
-1
0
1
2