In[•]:=
```
Q[bj_, bh_] := Sqrt[E^(2*bj) * Cosh[bh]^2 - 2 Sinh[2 bj]];
lp[bj_, bh_] := E^bj Cosh[bh] + Q[bj, bh];
lm[bj_, bh_] := E^bj Cosh[bh] - Q[bj, bh];
Zobc[bj_, bh_, n_] := lp[bj, bh]^(n - 1) * (E^bj Sinh[bh]^2/Q[bj, bh] + 1/(E^bj Q[bj, bh]) + Cosh[bh]) -
    lm[bj, bh]^(n - 1) * (E^bj Sinh[bh]^2/Q[bj, bh] + 1/(E^bj Q[bj, bh]) - Cosh[bh]);
Zpbc[bj_, bh_, n_] := lp[bj, bh]^n + lm[bj, bh]^n
```
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In[•]:=
```
m2 = D[Zobc[bj, bh, n], {bh, 2}]/Zobc[bj, bh, n] * n^2 /. {bh → 0, bj → 1/2.269}
m4 = D[Zobc[bj, bh, n], {bh, 4}]/Zobc[bj, bh, n] * n^4 /. {bh → 0, bj → 1/2.269}
```

Out[•]=
$$\left(0. + 2.00049 \times 0.910259^{-1+n} - 0.000491583 \times 2.1974^{-1+n} + 1.11022 \times 10^{-16}\right.$$
$$\left.\left(0. - 2.19772 \times 0.910259^{-2+n}\left(-1+n\right)\right) + 2.\left(0. + 5.30538 \times 2.1974^{-2+n}\left(-1+n\right)\right)\right) /$$
$$\left(\left(1.11022 \times 10^{-16} \times 0.910259^{-1+n} + 2. \times 2.1974^{-1+n}\right) n^2\right)$$

Out[•]=
$$\frac{1}{\left(1.11022 \times 10^{-16} \times 0.910259^{-1+n} + 2. \times 2.1974^{-1+n}\right) n^4}$$
$$\left(0. - 131.932 \times 0.910259^{-1+n} + 133.932 \times 2.1974^{-1+n} + \right.$$
$$12.0029\left(0. - 2.19772 \times 0.910259^{-2+n}\left(-1+n\right)\right) -$$
$$0.0029495\left(0. + 5.30538 \times 2.1974^{-2+n}\left(-1+n\right)\right) + 1.11022 \times 10^{-16}$$
$$\left(0. + 52.1539 \times 0.910259^{-2+n}\left(-1+n\right) + 14.4899 \times 0.910259^{-3+n}\left(-2+n\right)\left(-1+n\right)\right) +$$
$$\left.2.\left(0. - 49.0463 \times 2.1974^{-2+n}\left(-1+n\right) + 84.4411 \times 2.1974^{-3+n}\left(-2+n\right)\left(-1+n\right)\right)\right)$$

In[•]:=
```
N[1 - m4/3 * m2^2 /. {n → 50}]
```
численное приближение

Out[•]= 0.0448609

In[•]:=
```
N[1 - m4/3 * m2^2 /. {n → 100}]
```
численное приближение

Out[•]= 0.0226025

In[•]:=
```
N[1 - m4/3 * m2^2 /. {n → 200}]
```
численное приближение

Out[•]= 0.0113421

In[•]:=
```
N[1 - m4/3 * m2^2 /. {n → 400}]
```
численное приближение

Out[•]= 0.00568103

In[•]:=
```
m4
```

Out[•]=
$$0. - 131.932 \times 0.910259^{-1+n} + 133.932 \times 2.1974^{-1+n} + 12.0029 \left(0. - 2.19772 \times 0.910259^{-2+n} \left(-1+n\right)\right) - 0.0029495 \left(0. + 5.30538 \times 2.1974^{-2+n} \left(-1+n\right)\right) + 1.11022 \times 10^{-16} \left(0. + 52.1539 \times 0.910259^{-2+n} \left(-1+n\right) + 14.4899 \times 0.910259^{-3+n} \left(-2+n\right) \left(-1+n\right)\right) + 2. \left(0. - 49.0463 \times 2.1974^{-2+n} \left(-1+n\right) + 84.4411 \times 2.1974^{-3+n} \left(-2+n\right) \left(-1+n\right)\right)$$

In[•]:=
```
m2 = D[Zpbc[bj, bh, n], {bh, 2}] / Zobc[bj, bh, n] * n^2 /. {bh → 0, bj → 1 / 2.269}
m4 = D[Zpbc[bj, bh, n], {bh, 4}] / Zobc[bj, bh, n] * n^4 /. {bh → 0, bj → 1 / 2.269}
```

Out[•]=
$$\frac{0. - 2.19772 \times 0.910259^{-1+n} n + 5.30538 \times 2.1974^{-1+n} n}{\left(1.11022 \times 10^{-16} \times 0.910259^{-1+n} + 2. \times 2.1974^{-1+n}\right) n^2}$$

Out[•]=
$$\left(0. + 52.1539 \times 0.910259^{-1+n} n - 49.0463 \times 2.1974^{-1+n} n + 14.4899 \times 0.910259^{-2+n} \left(-1+n\right) n + 84.4411 \times 2.1974^{-2+n} \left(-1+n\right) n\right) / \left(\left(1.11022 \times 10^{-16} \times 0.910259^{-1+n} + 2. \times 2.1974^{-1+n}\right) n^4\right)$$

In[•]:=
```
N[1 - m4 / (3 m2^2) /. {n → 50}]
```
численное приближение

Out[•]=
```
0.131271
```

In[•]:=
```
N[1 - m4 / (3 m2^2) /. {n → 100}]
```
численное приближение

Out[•]=
```
0.110552
```

In[•]:=
```
N[1 - m4 / (3 m2^2) /. {n → 200}]
```
численное приближение

Out[•]=
```
0.100193
```

In[•]:=
```
N[1 - m4 / (3 m2^2) /. {n → 400}]
```
численное приближение

Out[•]=
```
0.0950134
```

In[•]:=
```
ListPlot[Table[1 - m4/(3 * m2^2), {n, 10, 10000, 1}], PlotRange → Full]
```
диаграмм··· таблица значений отображаем··· в полно

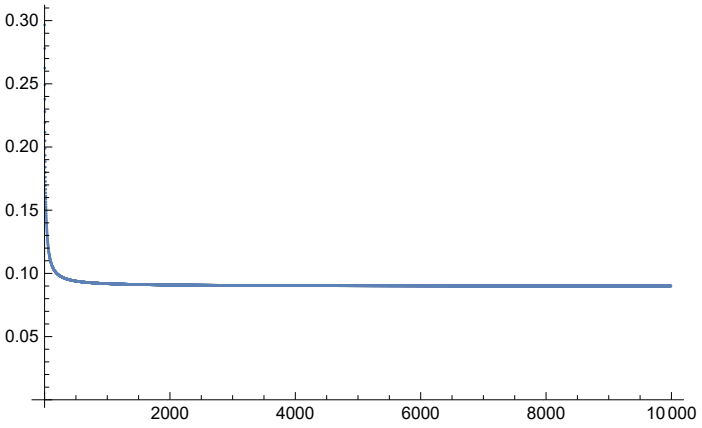
General: $\frac{8.85956 \times 10^{-297}}{562434001936}$ is too small to represent as a normalized machine number; precision may be lost.

General: $\frac{4.03184 \times 10^{-297}}{565036352721}$ is too small to represent as a normalized machine number; precision may be lost.

General: $\frac{1.83482 \times 10^{-297}}{567647723776}$ is too small to represent as a normalized machine number; precision may be lost.

General: Further output of General::munfl will be suppressed during this calculation.

Out[•]=



In[•]:=
```
n = 10000000
1 - m4/(3 * m2^2)
```

Out[•]=
```
10000000
```

General: $0.910259^{9999999}$ is too small to represent as a normalized machine number; precision may be lost.

General: $0.910259^{9999999}$ is too small to represent as a normalized machine number; precision may be lost.

General: $0.910259^{9999998}$ is too small to represent as a normalized machine number; precision may be lost.

General: Further output of General::munfl will be suppressed during this calculation.

Out[•]=
```
0.089834055692997
```