```
ClearAll["Global`*"]
D3[n_] := Sum[1, {x, 1, n}, {y, 1, Floor[n / x]}, {z, 1, Floor[n / (x y)]}]

D3[100]

1471

d[n_, k_] := d[n, k] = Sum[d[j, k - 1] d[n / j, 1], {j, Divisors[n]}];
d[n_, 1] := d[n, 1] = 1; d[n_, 0] := 0; d[1, 0] := 1
DD[n_, k_] := DD[n, k] = Sum[d[j, k], {j, 1, Floor[n]}]

a1[n_] := -Sum[d[j, 2] FractionalPart[n / j], {j, 1, n}] + n Sum[d[j, 2] / j, {j, 1, n}]

N[a1[100]]

1471.

a0[n_] := Sum[d[j, 2] Floor[n / j], {j, 1, n}]

a0[100]

1471

a01[n_] := Sum[d[j, 2] ( n / j - FractionalPart[n / j]), {j, 1, n}]

a01[100]

1471

a01[n_] := Sum[d[j, 2] ( n / j), {j, 1, n}] - Sum[d[j, 2] FractionalPart[n / j], {j, 1, n}]

a01[100]

1471

a2[n_] := -Sum[d[j, 2] FractionalPart[n / j], {j, 1, n}] +
  DD[n, 2] + n Integrate[ DD[Floor[u], 2] / u^2, {u, 1, n}]

N[a2[100]]
```

NIntegrate::slwcon :
  Numerical integration converging too slowly; suspect one of the following: singularity, value of the integration
      is 0, highly oscillatory integrand, or WorkingPrecision too small. ≫

NIntegrate::ncvb :
  NIntegrate failed to converge to prescribed accuracy after 9 recursive bisections in u near {u} = {2.1666}. NIntegrate
      obtained 11.595903097791236` and 0.05806940463647516` for the integral and error estimates. ≫

```
1466.92

SS[n_] := n Integrate[ DD[Floor[u], 2] / u^2, {u, 1, n}]

N[SS[10]]
```

NIntegrate::slwcon :
  Numerical integration converging too slowly; suspect one of the following: singularity, value of the integration
      is 0, highly oscillatory integrand, or WorkingPrecision too small. ≫

NIntegrate::ncvb :
  NIntegrate failed to converge to prescribed accuracy after 9 recursive bisections in u near {u} = {2.00181}. NIntegrate
      obtained 3.301665218344092` and 0.0021079831626377287` for the integral and error estimates. ≫

```
33.0167
```

```
a3[n_] := -Sum[ d[j, 2] FractionalPart[n / j], {j, 1, n}] +
   DD[n, 2] + n Integrate[(1 - 2 Floor[u] + Floor[u] HarmonicNumber[Floor[u]] -
         Sum[ FractionalPart[Floor[u] / x], {x, 1, Floor[u]}]) / u^2, {u, 1, n}]

N[a3[100]]

$Aborted

a3a[n_] := -Sum[ d[j, 2] FractionalPart[n / j], {j, 1, n}] +
   DD[n, 2] + n Integrate[(1 - 2 Floor[u] + Floor[u] HarmonicNumber[Floor[u]] -
         Sum[ FractionalPart[Floor[u] / x], {x, 1, Floor[u]}]) / u^2, {u, 1, n}]


n Integrate[(1 - 2 Floor[u] + Floor[u] HarmonicNumber[Floor[u]]) / u^2, {u, 1, n}]

$Aborted
```