```
xx[n_, a_] := a^4 - Floor[n^(1/4)]^4 +

       Floor[n^(1/4)]
  4      ∑           Floor[b^-3 n] +
       b=a+1

        Floor[n^(1/4)]
  -6      ∑           Floor[√(b^-2 n)]^2 +
        b=a+1

       Floor[n^(1/4)] Floor[√(b^-2 n)]
  12      ∑            ∑              Floor[b^-2 c^-1 n] +
        b=a+1          c=1+b

       Floor[n^(1/4)]
  4      ∑           Floor[(b^-1 n)^(1/3)]^3 +
       b=a+1

        Floor[n^(1/4)]  (Floor[(b^-1 n)^(1/3)]                    )
  12      ∑            (     ∑            Floor[b^-1 c^-2 n]       ) +
        b=a+1          (   c=1+b                                   )

        Floor[n^(1/4)]  (Floor[(b^-1 n)^(1/3)]                        )
  -12     ∑            (     ∑            Floor[√(b^-1 c^-1 n)]^2     ) +
        b=a+1          (   c=1+b                                      )

        Floor[n^(1/4)]  (Floor[(b^-1 n)^(1/3)] Floor[√(b^-1 c^-1 n)]                        )
  24      ∑            (      ∑                   ∑               Floor[b^-1 c^-1 d^-1 n]    )
        b=a+1          (    c=1+b               d=1+c                                        )


xx[10 000, 1]

487 043


d4[10 000, 1]

487 043

Dd[ 10 000, 4, 2]

487 043

Dd[n_, 0, a_] := 1; Dd[n_, 1, a_] := Floor[n] - a + 1
Dd[n_, k_, a_] :=
 Dd[n, k, a] = Sum[Binomial[k, j] Dd[n / (m^(k - j)), j, m + 1], {m, a, n^(1 / k)}, {j, 0, k - 1}]
```

```
d3a[n_, a_] := - (a)^3 +
```

$$\text{Floor}\left[n^{1/3}\right]^3 +$$

$$3 \sum_{b=a+1}^{\text{Floor}\left[n^{1/3}\right]} \text{Floor}\left[\frac{n}{b^2}\right] +$$

$$-3 \sum_{b=a+1}^{\text{Floor}\left[n^{1/3}\right]} \text{Floor}\left[\sqrt{\frac{n}{b}}\,\right]^2 +$$

$$6 \sum_{b=a+1}^{\text{Floor}\left[n^{1/3}\right]} \sum_{c=1+b}^{\text{Floor}\left[\sqrt{\frac{n}{b}}\,\right]} \text{Floor}\left[\frac{n}{b\,c}\right]$$

```
Dd[10 000, 3, 3]
```

152 983

```
d3a[10 000, 2]
```

152 983

```
d0[n_, a_] := 1
d1[n_, a_] := -a +
  Floor[n]
d2[n_, a_] := a^2 +
  - Floor[ n^(1 / 2)]^2 +
  2 Sum[ Floor[ n b^-1], {b, a + 1, n^(1 / 2)}]
d3[n_, a_] := -a^3 +
  Floor[n^(1 / 3)]^3 +
  3 Sum[ Floor[ n b^-2], {b, a + 1, n^(1 / 3)}] +
  -3 Sum[ Floor[ (n / b)^(1 / 2)]^2, {b, a + 1, n^(1 / 3)}] +
  6 Sum[ Floor[ n / (b c)], {b, a + 1, n^(1 / 3)}, {c, b + 1, (n / b)^(1 / 2)}]
d4[n_, a_] := a^4 +
  - Floor[ n^(1 / 4)]^4 +
  4 Sum[ Floor[n / b^3], {b, a + 1, n^(1 / 4)}] +
  -6 Sum[ Floor[ (n / b^2)^(1 / 2)]^2, {b, a + 1, n^(1 / 4)}] +
  12 Sum[ Floor[ n / (b^2 c)], {b, a + 1, n^(1 / 4)}, {c, b + 1, (n / b^2)^(1 / 2)}] +
  4 Sum[ Floor[ (n / b)^(1 / 3)]^3, {b, a + 1, n^(1 / 4)}] +
  12 Sum[ Floor[ n / ( b c^2)], {b, a + 1, n^(1 / 4)}, {c, b + 1, (n / b)^(1 / 3)}] +
  -12 Sum[ Floor[ (n / (b c))^(1 / 2)]^2, {b, a + 1, n^(1 / 4)}, {c, b + 1, (n / b)^(1 / 3)}] +
  24 Sum[ Floor[ n / (b c d)], {b, a + 1, n^(1 / 4)},
    {c, b + 1, (n / b)^(1 / 3)}, {d, c + 1, (n / (b c))^(1 / 2)}]
d5x[n_, a_] := -1 a^5 + 1 / 1 Floor[n^(1 / 5)]^5 +
  5 Sum[Floor[(n / (b^4))], {b, a + 1, (n)^(1 / 5)}] +
  -10 Sum[Floor[(n / (b^3))^(1 / 2)]^2, {b, a + 1, (n)^(1 / 5)}] +
  20 Sum[Floor[(n / (b^3 c))], {b, a + 1, (n)^(1 / 5)}, {c, b + 1, (n / (b^3))^(1 / 2)}] +
  10 Sum[Floor[(n / (b^2))^(1 / 3)]^3, {b, a + 1, (n)^(1 / 5)}] +
  30 Sum[Floor[(n / (b^2 c^2))], {b, a + 1, (n)^(1 / 5)}, {c, b + 1, (n / (b^2))^(1 / 3)}] + -30
    Sum[Floor[(n / (b^2 c))^(1 / 2)]^2, {b, a + 1, (n)^(1 / 5)}, {c, b + 1, (n / (b^2))^(1 / 3)}] +
  60 Sum[Floor[(n / (b^2 c d))], {b, a + 1, (n)^(1 / 5)},
    {c, b + 1, (n / (b^2))^(1 / 3)}, {d, c + 1, (n / (b^2 c))^(1 / 2)}] +
  -5 Sum[Floor[(n / (b))^(1 / 4)]^4, {b, a + 1, (n)^(1 / 5)}] +
  20 Sum[Floor[(n / (b c^3))], {b, a + 1, (n)^(1 / 5)}, {c, b + 1, (n / (b))^(1 / 4)}] +
```

```
    720 Sum[Floor[(n / (b c d e f))], {b, a + 1, (n) ^ (1 / 6)}, {c, b + 1, (n / (b)) ^ (1 / 5)}, {d, c + 1,
        (n / (b c)) ^ (1 / 4)}, {e, d + 1, (n / (b c d)) ^ (1 / 3)}, {f, e + 1, (n / (b c d e)) ^ (1 / 2)}]
d7x[n_, a_] := -1 a ^ 7 + 1 / 1 Floor[n ^ (1 / 7)] ^ 7 +
  7 Sum[Floor[(n / (b^6))], {b, a + 1, (n) ^ (1 / 7)}] +
  -21 Sum[Floor[(n / (b^5)) ^ (1 / 2)] ^ 2, {b, a + 1, (n) ^ (1 / 7)}] +
  42 Sum[Floor[(n / (b^5 c))], {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b^5)) ^ (1 / 2)}] +
  35 Sum[Floor[(n / (b^4)) ^ (1 / 3)] ^ 3, {b, a + 1, (n) ^ (1 / 7)}] +
  105 Sum[Floor[(n / (b^4 c^2))], {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b^4)) ^ (1 / 3)}] + -105
   Sum[Floor[(n / (b^4 c)) ^ (1 / 2)] ^ 2, {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b^4)) ^ (1 / 3)}] +
  210 Sum[Floor[(n / (b^4 c d))], {b, a + 1, (n) ^ (1 / 7)},
     {c, b + 1, (n / (b^4)) ^ (1 / 3)}, {d, c + 1, (n / (b^4 c)) ^ (1 / 2)}] +
  -35 Sum[Floor[(n / (b^3)) ^ (1 / 4)] ^ 4, {b, a + 1, (n) ^ (1 / 7)}] +
  140 Sum[Floor[(n / (b^3 c^3))], {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b^3)) ^ (1 / 4)}] +
  -210 Sum[Floor[(n / (b^3 c^2)) ^ (1 / 2)] ^ 2, {b, a + 1, (n) ^ (1 / 7)},
     {c, b + 1, (n / (b^3)) ^ (1 / 4)}] + 420 Sum[Floor[(n / (b^3 c^2 d))], {b, a + 1, (n) ^ (1 / 7)},
     {c, b + 1, (n / (b^3)) ^ (1 / 4)}, {d, c + 1, (n / (b^3 c^2)) ^ (1 / 2)}] + 140
   Sum[Floor[(n / (b^3 c)) ^ (1 / 3)] ^ 3, {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b^3)) ^ (1 / 4)}] +
  420 Sum[Floor[(n / (b^3 c d^2))], {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b^3)) ^ (1 / 4)},
     {d, c + 1, (n / (b^3 c)) ^ (1 / 3)}] + -420 Sum[Floor[(n / (b^3 c d)) ^ (1 / 2)] ^ 2,
     {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b^3)) ^ (1 / 4)}, {d, c + 1, (n / (b^3 c)) ^ (1 / 3)}] +
  840 Sum[Floor[(n / (b^3 c d e))], {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b^3)) ^ (1 / 4)},
     {d, c + 1, (n / (b^3 c)) ^ (1 / 3)}, {e, d + 1, (n / (b^3 c d)) ^ (1 / 2)}] +
  21 Sum[Floor[(n / (b^2)) ^ (1 / 5)] ^ 5, {b, a + 1, (n) ^ (1 / 7)}] +
  105 Sum[Floor[(n / (b^2 c^4))], {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b^2)) ^ (1 / 5)}] +
  -210 Sum[Floor[(n / (b^2 c^3)) ^ (1 / 2)] ^ 2, {b, a + 1, (n) ^ (1 / 7)},
     {c, b + 1, (n / (b^2)) ^ (1 / 5)}] + 420 Sum[Floor[(n / (b^2 c^3 d))], {b, a + 1, (n) ^ (1 / 7)},
     {c, b + 1, (n / (b^2)) ^ (1 / 5)}, {d, c + 1, (n / (b^2 c^3)) ^ (1 / 2)}] +
  210 Sum[Floor[(n / (b^2 c^2)) ^ (1 / 3)] ^ 3, {b, a + 1, (n) ^ (1 / 7)},
     {c, b + 1, (n / (b^2)) ^ (1 / 5)}] + 630 Sum[Floor[(n / (b^2 c^2 d^2))],
     {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b^2)) ^ (1 / 5)}, {d, c + 1, (n / (b^2 c^2)) ^ (1 / 3)}] +
  -630 Sum[Floor[(n / (b^2 c^2 d)) ^ (1 / 2)] ^ 2, {b, a + 1, (n) ^ (1 / 7)},
     {c, b + 1, (n / (b^2)) ^ (1 / 5)}, {d, c + 1, (n / (b^2 c^2)) ^ (1 / 3)}] +
  1260 Sum[Floor[(n / (b^2 c^2 d e))], {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b^2)) ^ (1 / 5)},
     {d, c + 1, (n / (b^2 c^2)) ^ (1 / 3)}, {e, d + 1, (n / (b^2 c^2 d)) ^ (1 / 2)}] + -105
   Sum[Floor[(n / (b^2 c)) ^ (1 / 4)] ^ 4, {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b^2)) ^ (1 / 5)}] +
  420 Sum[Floor[(n / (b^2 c d^3))], {b, a + 1, (n) ^ (1 / 7)},
     {c, b + 1, (n / (b^2)) ^ (1 / 5)}, {d, c + 1, (n / (b^2 c)) ^ (1 / 4)}] +
  -630 Sum[Floor[(n / (b^2 c d^2)) ^ (1 / 2)] ^ 2, {b, a + 1, (n) ^ (1 / 7)},
     {c, b + 1, (n / (b^2)) ^ (1 / 5)}, {d, c + 1, (n / (b^2 c)) ^ (1 / 4)}] +
  1260 Sum[Floor[(n / (b^2 c d^2 e))], {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b^2)) ^ (1 / 5)},
     {d, c + 1, (n / (b^2 c)) ^ (1 / 4)}, {e, d + 1, (n / (b^2 c d^2)) ^ (1 / 2)}] +
  420 Sum[Floor[(n / (b^2 c d)) ^ (1 / 3)] ^ 3, {b, a + 1, (n) ^ (1 / 7)},
     {c, b + 1, (n / (b^2)) ^ (1 / 5)}, {d, c + 1, (n / (b^2 c)) ^ (1 / 4)}] +
  1260 Sum[Floor[(n / (b^2 c d e^2))], {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b^2)) ^ (1 / 5)},
     {d, c + 1, (n / (b^2 c)) ^ (1 / 4)}, {e, d + 1, (n / (b^2 c d)) ^ (1 / 3)}] +
  -1260 Sum[Floor[(n / (b^2 c d e)) ^ (1 / 2)] ^ 2, {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1,
      (n / (b^2)) ^ (1 / 5)}, {d, c + 1, (n / (b^2 c)) ^ (1 / 4)}, {e, d + 1, (n / (b^2 c d)) ^ (1 / 3)}] +
  2520 Sum[Floor[(n / (b^2 c d e f))], {b, a + 1, (n) ^ (1 / 7)},
     {c, b + 1, (n / (b^2)) ^ (1 / 5)}, {d, c + 1, (n / (b^2 c)) ^ (1 / 4)},
     {e, d + 1, (n / (b^2 c d)) ^ (1 / 3)}, {f, e + 1, (n / (b^2 c d e)) ^ (1 / 2)}] +
  -7 Sum[Floor[(n / (b)) ^ (1 / 6)] ^ 6, {b, a + 1, (n) ^ (1 / 7)}] +
  42 Sum[Floor[(n / (b c^5))], {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b)) ^ (1 / 6)}] +
```

```
-105 Sum[Floor[(n / (b c^4)) ^ (1 / 2)] ^2, {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b)) ^ (1 / 6)}] +
210 Sum[Floor[(n / (b c^4 d))], {b, a + 1, (n) ^ (1 / 7)},
  {c, b + 1, (n / (b)) ^ (1 / 6)}, {d, c + 1, (n / (b c^4)) ^ (1 / 2)}] +
140 Sum[Floor[(n / (b c^3)) ^ (1 / 3)] ^3, {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b)) ^ (1 / 6)}] +
420 Sum[Floor[(n / (b c^3 d^2))], {b, a + 1, (n) ^ (1 / 7)},
  {c, b + 1, (n / (b)) ^ (1 / 6)}, {d, c + 1, (n / (b c^3)) ^ (1 / 3)}] +
-420 Sum[Floor[(n / (b c^3 d)) ^ (1 / 2)] ^2, {b, a + 1, (n) ^ (1 / 7)},
  {c, b + 1, (n / (b)) ^ (1 / 6)}, {d, c + 1, (n / (b c^3)) ^ (1 / 3)}] +
840 Sum[Floor[(n / (b c^3 d e))], {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b)) ^ (1 / 6)},
  {d, c + 1, (n / (b c^3)) ^ (1 / 3)}, {e, d + 1, (n / (b c^3 d)) ^ (1 / 2)}] +
-105 Sum[Floor[(n / (b c^2)) ^ (1 / 4)] ^4, {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b)) ^ (1 / 6)}] +
420 Sum[Floor[(n / (b c^2 d^3))], {b, a + 1, (n) ^ (1 / 7)},
  {c, b + 1, (n / (b)) ^ (1 / 6)}, {d, c + 1, (n / (b c^2)) ^ (1 / 4)}] +
-630 Sum[Floor[(n / (b c^2 d^2)) ^ (1 / 2)] ^2, {b, a + 1, (n) ^ (1 / 7)},
  {c, b + 1, (n / (b)) ^ (1 / 6)}, {d, c + 1, (n / (b c^2)) ^ (1 / 4)}] +
1260 Sum[Floor[(n / (b c^2 d^2 e))], {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b)) ^ (1 / 6)},
  {d, c + 1, (n / (b c^2)) ^ (1 / 4)}, {e, d + 1, (n / (b c^2 d^2)) ^ (1 / 2)}] +
420 Sum[Floor[(n / (b c^2 d)) ^ (1 / 3)] ^3, {b, a + 1, (n) ^ (1 / 7)},
  {c, b + 1, (n / (b)) ^ (1 / 6)}, {d, c + 1, (n / (b c^2)) ^ (1 / 4)}] +
1260 Sum[Floor[(n / (b c^2 d e^2))], {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b)) ^ (1 / 6)},
  {d, c + 1, (n / (b c^2)) ^ (1 / 4)}, {e, d + 1, (n / (b c^2 d)) ^ (1 / 3)}] + -1260
 Sum[Floor[(n / (b c^2 d e)) ^ (1 / 2)] ^2, {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b)) ^ (1 / 6)},
  {d, c + 1, (n / (b c^2)) ^ (1 / 4)}, {e, d + 1, (n / (b c^2 d)) ^ (1 / 3)}] +
2520 Sum[Floor[(n / (b c^2 d e f))], {b, a + 1, (n) ^ (1 / 7)},
  {c, b + 1, (n / (b)) ^ (1 / 6)}, {d, c + 1, (n / (b c^2)) ^ (1 / 4)},
  {e, d + 1, (n / (b c^2 d)) ^ (1 / 3)}, {f, e + 1, (n / (b c^2 d e)) ^ (1 / 2)}] +
42 Sum[Floor[(n / (b c)) ^ (1 / 5)] ^5, {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b)) ^ (1 / 6)}] +
210 Sum[Floor[(n / (b c d^4))], {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b)) ^ (1 / 6)},
  {d, c + 1, (n / (b c)) ^ (1 / 5)}] + -420 Sum[Floor[(n / (b c d^3)) ^ (1 / 2)] ^2,
  {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b)) ^ (1 / 6)}, {d, c + 1, (n / (b c)) ^ (1 / 5)}] +
840 Sum[Floor[(n / (b c d^3 e))], {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b)) ^ (1 / 6)},
  {d, c + 1, (n / (b c)) ^ (1 / 5)}, {e, d + 1, (n / (b c d^3)) ^ (1 / 2)}] +
420 Sum[Floor[(n / (b c d^2)) ^ (1 / 3)] ^3, {b, a + 1, (n) ^ (1 / 7)},
  {c, b + 1, (n / (b)) ^ (1 / 6)}, {d, c + 1, (n / (b c)) ^ (1 / 5)}] +
1260 Sum[Floor[(n / (b c d^2 e^2))], {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b)) ^ (1 / 6)},
  {d, c + 1, (n / (b c)) ^ (1 / 5)}, {e, d + 1, (n / (b c d^2)) ^ (1 / 3)}] + -1260
 Sum[Floor[(n / (b c d^2 e)) ^ (1 / 2)] ^2, {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b)) ^ (1 / 6)},
  {d, c + 1, (n / (b c)) ^ (1 / 5)}, {e, d + 1, (n / (b c d^2)) ^ (1 / 3)}] +
2520 Sum[Floor[(n / (b c d^2 e f))], {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b)) ^ (1 / 6)},
  {d, c + 1, (n / (b c)) ^ (1 / 5)}, {e, d + 1, (n / (b c d^2)) ^ (1 / 3)},
  {f, e + 1, (n / (b c d^2 e)) ^ (1 / 2)}] + -210 Sum[Floor[(n / (b c d)) ^ (1 / 4)] ^4,
  {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b)) ^ (1 / 6)}, {d, c + 1, (n / (b c)) ^ (1 / 5)}] +
840 Sum[Floor[(n / (b c d e^3))], {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b)) ^ (1 / 6)},
  {d, c + 1, (n / (b c)) ^ (1 / 5)}, {e, d + 1, (n / (b c d)) ^ (1 / 4)}] +
-1260 Sum[Floor[(n / (b c d e^2)) ^ (1 / 2)] ^2, {b, a + 1, (n) ^ (1 / 7)},
  {c, b + 1, (n / (b)) ^ (1 / 6)}, {d, c + 1, (n / (b c)) ^ (1 / 5)}, {e, d + 1, (n / (b c d)) ^ (1 / 4)}] +
2520 Sum[Floor[(n / (b c d e^2 f))], {b, a + 1, (n) ^ (1 / 7)},
  {c, b + 1, (n / (b)) ^ (1 / 6)}, {d, c + 1, (n / (b c)) ^ (1 / 5)},
  {e, d + 1, (n / (b c d)) ^ (1 / 4)}, {f, e + 1, (n / (b c d e^2)) ^ (1 / 2)}] +
840 Sum[Floor[(n / (b c d e)) ^ (1 / 3)] ^3, {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b)) ^ (1 / 6)},
  {d, c + 1, (n / (b c)) ^ (1 / 5)}, {e, d + 1, (n / (b c d)) ^ (1 / 4)}] +
2520 Sum[Floor[(n / (b c d e f^2))], {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b)) ^ (1 / 6)},
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        {d, c + 1, (n / (b c)) ^ (1 / 5)}, {e, d + 1, (n / (b c d)) ^ (1 / 4)},
        {f, e + 1, (n / (b c d e)) ^ (1 / 3)}] + -2520 Sum[Floor[(n / (b c d e f)) ^ (1 / 2)]^2,
        {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b)) ^ (1 / 6)}, {d, c + 1, (n / (b c)) ^ (1 / 5)},
        {e, d + 1, (n / (b c d)) ^ (1 / 4)}, {f, e + 1, (n / (b c d e)) ^ (1 / 3)}] +
      5040 Sum[Floor[(n / (b c d e f g))], {b, a + 1, (n) ^ (1 / 7)}, {c, b + 1, (n / (b)) ^ (1 / 6)},
        {d, c + 1, (n / (b c)) ^ (1 / 5)}, {e, d + 1, (n / (b c d)) ^ (1 / 4)},
        {f, e + 1, (n / (b c d e)) ^ (1 / 3)}, {g, f + 1, (n / (b c d e f)) ^ (1 / 2)}]
  d8x[n_, a_] := 1 a^8 + -1 / 1 Floor[n^(1 / 8)]^8 +
    8 Sum[Floor[(n / (b^7))], {b, a + 1, (n) ^ (1 / 8)}] +
    -28 Sum[Floor[(n / (b^6)) ^ (1 / 2)]^2, {b, a + 1, (n) ^ (1 / 8)}] +
    56 Sum[Floor[(n / (b^6 c))], {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b^6)) ^ (1 / 2)}] +
    56 Sum[Floor[(n / (b^5)) ^ (1 / 3)]^3, {b, a + 1, (n) ^ (1 / 8)}] +
    168 Sum[Floor[(n / (b^5 c^2))], {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b^5)) ^ (1 / 3)}] + -168
     Sum[Floor[(n / (b^5 c)) ^ (1 / 2)]^2, {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b^5)) ^ (1 / 3)}] +
    336 Sum[Floor[(n / (b^5 c d))], {b, a + 1, (n) ^ (1 / 8)},
      {c, b + 1, (n / (b^5)) ^ (1 / 3)}, {d, c + 1, (n / (b^5 c)) ^ (1 / 2)}] +
    -70 Sum[Floor[(n / (b^4)) ^ (1 / 4)]^4, {b, a + 1, (n) ^ (1 / 8)}] +
    280 Sum[Floor[(n / (b^4 c^3))], {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b^4)) ^ (1 / 4)}] +
    -420 Sum[Floor[(n / (b^4 c^2)) ^ (1 / 2)]^2, {b, a + 1, (n) ^ (1 / 8)},
      {c, b + 1, (n / (b^4)) ^ (1 / 4)}] + 840 Sum[Floor[(n / (b^4 c^2 d))], {b, a + 1, (n) ^ (1 / 8)},
      {c, b + 1, (n / (b^4)) ^ (1 / 4)}, {d, c + 1, (n / (b^4 c^2)) ^ (1 / 2)}] + 280
     Sum[Floor[(n / (b^4 c)) ^ (1 / 3)]^3, {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b^4)) ^ (1 / 4)}] +
    840 Sum[Floor[(n / (b^4 c d^2))], {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b^4)) ^ (1 / 4)},
      {d, c + 1, (n / (b^4 c)) ^ (1 / 3)}] + -840 Sum[Floor[(n / (b^4 c d)) ^ (1 / 2)]^2,
      {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b^4)) ^ (1 / 4)}, {d, c + 1, (n / (b^4 c)) ^ (1 / 3)}] +
    1680 Sum[Floor[(n / (b^4 c d e))], {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b^4)) ^ (1 / 4)},
      {d, c + 1, (n / (b^4 c)) ^ (1 / 3)}, {e, d + 1, (n / (b^4 c d)) ^ (1 / 2)}] +
    56 Sum[Floor[(n / (b^3)) ^ (1 / 5)]^5, {b, a + 1, (n) ^ (1 / 8)}] +
    280 Sum[Floor[(n / (b^3 c^4))], {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b^3)) ^ (1 / 5)}] +
    -560 Sum[Floor[(n / (b^3 c^3)) ^ (1 / 2)]^2, {b, a + 1, (n) ^ (1 / 8)},
      {c, b + 1, (n / (b^3)) ^ (1 / 5)}] + 1120 Sum[Floor[(n / (b^3 c^3 d))], {b, a + 1, (n) ^ (1 / 8)},
      {c, b + 1, (n / (b^3)) ^ (1 / 5)}, {d, c + 1, (n / (b^3 c^3)) ^ (1 / 2)}] +
    560 Sum[Floor[(n / (b^3 c^2)) ^ (1 / 3)]^3, {b, a + 1, (n) ^ (1 / 8)},
      {c, b + 1, (n / (b^3)) ^ (1 / 5)}] + 1680 Sum[Floor[(n / (b^3 c^2 d^2))],
      {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b^3)) ^ (1 / 5)}, {d, c + 1, (n / (b^3 c^2)) ^ (1 / 3)}] +
    -1680 Sum[Floor[(n / (b^3 c^2 d)) ^ (1 / 2)]^2, {b, a + 1, (n) ^ (1 / 8)},
      {c, b + 1, (n / (b^3)) ^ (1 / 5)}, {d, c + 1, (n / (b^3 c^2)) ^ (1 / 3)}] +
    3360 Sum[Floor[(n / (b^3 c^2 d e))], {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b^3)) ^ (1 / 5)},
      {d, c + 1, (n / (b^3 c^2)) ^ (1 / 3)}, {e, d + 1, (n / (b^3 c^2 d)) ^ (1 / 2)}] + -280
     Sum[Floor[(n / (b^3 c)) ^ (1 / 4)]^4, {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b^3)) ^ (1 / 5)}] +
    1120 Sum[Floor[(n / (b^3 c d^3))], {b, a + 1, (n) ^ (1 / 8)},
      {c, b + 1, (n / (b^3)) ^ (1 / 5)}, {d, c + 1, (n / (b^3 c)) ^ (1 / 4)}] +
    -1680 Sum[Floor[(n / (b^3 c d^2)) ^ (1 / 2)]^2, {b, a + 1, (n) ^ (1 / 8)},
      {c, b + 1, (n / (b^3)) ^ (1 / 5)}, {d, c + 1, (n / (b^3 c)) ^ (1 / 4)}] +
    3360 Sum[Floor[(n / (b^3 c d^2 e))], {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b^3)) ^ (1 / 5)},
      {d, c + 1, (n / (b^3 c)) ^ (1 / 4)}, {e, d + 1, (n / (b^3 c d^2)) ^ (1 / 2)}] +
    1120 Sum[Floor[(n / (b^3 c d)) ^ (1 / 3)]^3, {b, a + 1, (n) ^ (1 / 8)},
      {c, b + 1, (n / (b^3)) ^ (1 / 5)}, {d, c + 1, (n / (b^3 c)) ^ (1 / 4)}] +
    3360 Sum[Floor[(n / (b^3 c d e^2))], {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b^3)) ^ (1 / 5)},
      {d, c + 1, (n / (b^3 c)) ^ (1 / 4)}, {e, d + 1, (n / (b^3 c d)) ^ (1 / 3)}] +
    -3360 Sum[Floor[(n / (b^3 c d e)) ^ (1 / 2)]^2, {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1,
       (n / (b^3)) ^ (1 / 5)}, {d, c + 1, (n / (b^3 c)) ^ (1 / 4)}, {e, d + 1, (n / (b^3 c d)) ^ (1 / 3)}] +
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6720 Sum[Floor[(n / (b^3 c d e f))], {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b^3)) ^ (1 / 5)}, {d, c + 1, (n / (b^3 c)) ^ (1 / 4)},
   {e, d + 1, (n / (b^3 c d)) ^ (1 / 3)}, {f, e + 1, (n / (b^3 c d e)) ^ (1 / 2)}] +
-28 Sum[Floor[(n / (b^2)) ^ (1 / 6)] ^ 6, {b, a + 1, (n) ^ (1 / 8)}] +
168 Sum[Floor[(n / (b^2 c^5))], {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b^2)) ^ (1 / 6)}] +
-420 Sum[Floor[(n / (b^2 c^4)) ^ (1 / 2)] ^ 2, {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b^2)) ^ (1 / 6)}] + 840 Sum[Floor[(n / (b^2 c^4 d))], {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b^2)) ^ (1 / 6)}, {d, c + 1, (n / (b^2 c^4)) ^ (1 / 2)}] +
560 Sum[Floor[(n / (b^2 c^3)) ^ (1 / 3)] ^ 3, {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b^2)) ^ (1 / 6)}] + 1680 Sum[Floor[(n / (b^2 c^3 d^2))],
   {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b^2)) ^ (1 / 6)}, {d, c + 1, (n / (b^2 c^3)) ^ (1 / 3)}] +
-1680 Sum[Floor[(n / (b^2 c^3 d)) ^ (1 / 2)] ^ 2, {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b^2)) ^ (1 / 6)}, {d, c + 1, (n / (b^2 c^3)) ^ (1 / 3)}] +
3360 Sum[Floor[(n / (b^2 c^3 d e))], {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b^2)) ^ (1 / 6)},
   {d, c + 1, (n / (b^2 c^3)) ^ (1 / 3)}, {e, d + 1, (n / (b^2 c^3 d)) ^ (1 / 2)}] +
-420 Sum[Floor[(n / (b^2 c^2)) ^ (1 / 4)] ^ 4, {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b^2)) ^ (1 / 6)}] + 1680 Sum[Floor[(n / (b^2 c^2 d^3))],
   {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b^2)) ^ (1 / 6)}, {d, c + 1, (n / (b^2 c^2)) ^ (1 / 4)}] +
-2520 Sum[Floor[(n / (b^2 c^2 d^2)) ^ (1 / 2)] ^ 2, {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b^2)) ^ (1 / 6)}, {d, c + 1, (n / (b^2 c^2)) ^ (1 / 4)}] +
5040 Sum[Floor[(n / (b^2 c^2 d^2 e))], {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b^2)) ^ (1 / 6)},
   {d, c + 1, (n / (b^2 c^2)) ^ (1 / 4)}, {e, d + 1, (n / (b^2 c^2 d^2)) ^ (1 / 2)}] +
1680 Sum[Floor[(n / (b^2 c^2 d)) ^ (1 / 3)] ^ 3, {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b^2)) ^ (1 / 6)}, {d, c + 1, (n / (b^2 c^2)) ^ (1 / 4)}] +
5040 Sum[Floor[(n / (b^2 c^2 d e^2))], {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b^2)) ^ (1 / 6)},
   {d, c + 1, (n / (b^2 c^2)) ^ (1 / 4)}, {e, d + 1, (n / (b^2 c^2 d)) ^ (1 / 3)}] +
-5040 Sum[Floor[(n / (b^2 c^2 d e)) ^ (1 / 2)] ^ 2, {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b^2)) ^ (1 / 6)}, {d, c + 1, (n / (b^2 c^2)) ^ (1 / 4)},
   {e, d + 1, (n / (b^2 c^2 d)) ^ (1 / 3)}] + 10 080 Sum[Floor[(n / (b^2 c^2 d e f))],
   {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b^2)) ^ (1 / 6)}, {d, c + 1, (n / (b^2 c^2)) ^ (1 / 4)},
   {e, d + 1, (n / (b^2 c^2 d)) ^ (1 / 3)}, {f, e + 1, (n / (b^2 c^2 d e)) ^ (1 / 2)}] + 168
 Sum[Floor[(n / (b^2 c)) ^ (1 / 5)] ^ 5, {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b^2)) ^ (1 / 6)}] +
840 Sum[Floor[(n / (b^2 c d^4))], {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b^2)) ^ (1 / 6)}, {d, c + 1, (n / (b^2 c)) ^ (1 / 5)}] +
-1680 Sum[Floor[(n / (b^2 c d^3)) ^ (1 / 2)] ^ 2, {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b^2)) ^ (1 / 6)}, {d, c + 1, (n / (b^2 c)) ^ (1 / 5)}] +
3360 Sum[Floor[(n / (b^2 c d^3 e))], {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b^2)) ^ (1 / 6)},
   {d, c + 1, (n / (b^2 c)) ^ (1 / 5)}, {e, d + 1, (n / (b^2 c d^3)) ^ (1 / 2)}] +
1680 Sum[Floor[(n / (b^2 c d^2)) ^ (1 / 3)] ^ 3, {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b^2)) ^ (1 / 6)}, {d, c + 1, (n / (b^2 c)) ^ (1 / 5)}] +
5040 Sum[Floor[(n / (b^2 c d^2 e^2))], {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b^2)) ^ (1 / 6)},
   {d, c + 1, (n / (b^2 c)) ^ (1 / 5)}, {e, d + 1, (n / (b^2 c d^2)) ^ (1 / 3)}] +
-5040 Sum[Floor[(n / (b^2 c d^2 e)) ^ (1 / 2)] ^ 2, {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b^2)) ^ (1 / 6)}, {d, c + 1, (n / (b^2 c)) ^ (1 / 5)},
   {e, d + 1, (n / (b^2 c d^2)) ^ (1 / 3)}] + 10 080 Sum[Floor[(n / (b^2 c d^2 e f))],
   {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b^2)) ^ (1 / 6)}, {d, c + 1, (n / (b^2 c)) ^ (1 / 5)},
   {e, d + 1, (n / (b^2 c d^2)) ^ (1 / 3)}, {f, e + 1, (n / (b^2 c d^2 e)) ^ (1 / 2)}] +
-840 Sum[Floor[(n / (b^2 c d)) ^ (1 / 4)] ^ 4, {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b^2)) ^ (1 / 6)}, {d, c + 1, (n / (b^2 c)) ^ (1 / 5)}] +
3360 Sum[Floor[(n / (b^2 c d e^3))], {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b^2)) ^ (1 / 6)},
   {d, c + 1, (n / (b^2 c)) ^ (1 / 5)}, {e, d + 1, (n / (b^2 c d)) ^ (1 / 4)}] +
-5040 Sum[Floor[(n / (b^2 c d e^2)) ^ (1 / 2)] ^ 2, {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1,
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    (n / (b^2)) ^ (1 / 6)}, {d, c + 1, (n / (b^2 c)) ^ (1 / 5)}, {e, d + 1, (n / (b^2 c d)) ^ (1 / 4)}] +
10 080 Sum[Floor[(n / (b^2 c d e^2 f))], {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b^2)) ^ (1 / 6)}, {d, c + 1, (n / (b^2 c)) ^ (1 / 5)},
   {e, d + 1, (n / (b^2 c d)) ^ (1 / 4)}, {f, e + 1, (n / (b^2 c d e^2)) ^ (1 / 2)}] +
3360 Sum[Floor[(n / (b^2 c d e)) ^ (1 / 3)]^3, {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1,
    (n / (b^2)) ^ (1 / 6)}, {d, c + 1, (n / (b^2 c)) ^ (1 / 5)}, {e, d + 1, (n / (b^2 c d)) ^ (1 / 4)}] +
10 080 Sum[Floor[(n / (b^2 c d e f^2))], {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b^2)) ^ (1 / 6)}, {d, c + 1, (n / (b^2 c)) ^ (1 / 5)},
   {e, d + 1, (n / (b^2 c d)) ^ (1 / 4)}, {f, e + 1, (n / (b^2 c d e)) ^ (1 / 3)}] +
-10 080 Sum[Floor[(n / (b^2 c d e f)) ^ (1 / 2)]^2, {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b^2)) ^ (1 / 6)}, {d, c + 1, (n / (b^2 c)) ^ (1 / 5)},
   {e, d + 1, (n / (b^2 c d)) ^ (1 / 4)}, {f, e + 1, (n / (b^2 c d e)) ^ (1 / 3)}] +
20 160 Sum[Floor[(n / (b^2 c d e f g))], {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b^2)) ^ (1 / 6)},
   {d, c + 1, (n / (b^2 c)) ^ (1 / 5)}, {e, d + 1, (n / (b^2 c d)) ^ (1 / 4)},
   {f, e + 1, (n / (b^2 c d e)) ^ (1 / 3)}, {g, f + 1, (n / (b^2 c d e f)) ^ (1 / 2)}] +
8 Sum[Floor[(n / (b)) ^ (1 / 7)]^7, {b, a + 1, (n) ^ (1 / 8)}] +
56 Sum[Floor[(n / (b c^6))], {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b)) ^ (1 / 7)}] +
-168 Sum[Floor[(n / (b c^5)) ^ (1 / 2)]^2, {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b)) ^ (1 / 7)}] +
336 Sum[Floor[(n / (b c^5 d))], {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b)) ^ (1 / 7)}, {d, c + 1, (n / (b c^5)) ^ (1 / 2)}] +
280 Sum[Floor[(n / (b c^4)) ^ (1 / 3)]^3, {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b)) ^ (1 / 7)}] +
840 Sum[Floor[(n / (b c^4 d^2))], {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b)) ^ (1 / 7)}, {d, c + 1, (n / (b c^4)) ^ (1 / 3)}] +
-840 Sum[Floor[(n / (b c^4 d)) ^ (1 / 2)]^2, {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b)) ^ (1 / 7)}, {d, c + 1, (n / (b c^4)) ^ (1 / 3)}] +
1680 Sum[Floor[(n / (b c^4 d e))], {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b)) ^ (1 / 7)},
   {d, c + 1, (n / (b c^4)) ^ (1 / 3)}, {e, d + 1, (n / (b c^4 d)) ^ (1 / 2)}] +
-280 Sum[Floor[(n / (b c^3)) ^ (1 / 4)]^4, {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b)) ^ (1 / 7)}] +
1120 Sum[Floor[(n / (b c^3 d^3))], {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b)) ^ (1 / 7)}, {d, c + 1, (n / (b c^3)) ^ (1 / 4)}] +
-1680 Sum[Floor[(n / (b c^3 d^2)) ^ (1 / 2)]^2, {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b)) ^ (1 / 7)}, {d, c + 1, (n / (b c^3)) ^ (1 / 4)}] +
3360 Sum[Floor[(n / (b c^3 d^2 e))], {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b)) ^ (1 / 7)},
   {d, c + 1, (n / (b c^3)) ^ (1 / 4)}, {e, d + 1, (n / (b c^3 d^2)) ^ (1 / 2)}] +
1120 Sum[Floor[(n / (b c^3 d)) ^ (1 / 3)]^3, {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b)) ^ (1 / 7)}, {d, c + 1, (n / (b c^3)) ^ (1 / 4)}] +
3360 Sum[Floor[(n / (b c^3 d e^2))], {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b)) ^ (1 / 7)},
   {d, c + 1, (n / (b c^3)) ^ (1 / 4)}, {e, d + 1, (n / (b c^3 d)) ^ (1 / 3)}] + -3360
 Sum[Floor[(n / (b c^3 d e)) ^ (1 / 2)]^2, {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b)) ^ (1 / 7)},
   {d, c + 1, (n / (b c^3)) ^ (1 / 4)}, {e, d + 1, (n / (b c^3 d)) ^ (1 / 3)}] +
6720 Sum[Floor[(n / (b c^3 d e f))], {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b)) ^ (1 / 7)}, {d, c + 1, (n / (b c^3)) ^ (1 / 4)},
   {e, d + 1, (n / (b c^3 d)) ^ (1 / 3)}, {f, e + 1, (n / (b c^3 d e)) ^ (1 / 2)}] +
168 Sum[Floor[(n / (b c^2)) ^ (1 / 5)]^5, {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b)) ^ (1 / 7)}] +
840 Sum[Floor[(n / (b c^2 d^4))], {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b)) ^ (1 / 7)}, {d, c + 1, (n / (b c^2)) ^ (1 / 5)}] +
-1680 Sum[Floor[(n / (b c^2 d^3)) ^ (1 / 2)]^2, {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b)) ^ (1 / 7)}, {d, c + 1, (n / (b c^2)) ^ (1 / 5)}] +
3360 Sum[Floor[(n / (b c^2 d^3 e))], {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b)) ^ (1 / 7)},
   {d, c + 1, (n / (b c^2)) ^ (1 / 5)}, {e, d + 1, (n / (b c^2 d^3)) ^ (1 / 2)}] +
1680 Sum[Floor[(n / (b c^2 d^2)) ^ (1 / 3)]^3, {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b)) ^ (1 / 7)}, {d, c + 1, (n / (b c^2)) ^ (1 / 5)}] +
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5040 Sum[Floor[(n / (b c^2 d^2 e^2))], {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b)) ^ (1 / 7)},
   {d, c + 1, (n / (b c^2)) ^ (1 / 5)}, {e, d + 1, (n / (b c^2 d^2)) ^ (1 / 3)}] +
-5040 Sum[Floor[(n / (b c^2 d^2 e)) ^ (1 / 2)]^2, {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1,
   (n / (b)) ^ (1 / 7)}, {d, c + 1, (n / (b c^2)) ^ (1 / 5)}, {e, d + 1, (n / (b c^2 d^2)) ^ (1 / 3)}] +
10 080 Sum[Floor[(n / (b c^2 d^2 e f))], {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b)) ^ (1 / 7)}, {d, c + 1, (n / (b c^2)) ^ (1 / 5)},
   {e, d + 1, (n / (b c^2 d^2)) ^ (1 / 3)}, {f, e + 1, (n / (b c^2 d^2 e)) ^ (1 / 2)}] +
-840 Sum[Floor[(n / (b c^2 d)) ^ (1 / 4)]^4, {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b)) ^ (1 / 7)}, {d, c + 1, (n / (b c^2)) ^ (1 / 5)}] +
3360 Sum[Floor[(n / (b c^2 d e^3))], {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b)) ^ (1 / 7)},
   {d, c + 1, (n / (b c^2)) ^ (1 / 5)}, {e, d + 1, (n / (b c^2 d)) ^ (1 / 4)}] +
-5040 Sum[Floor[(n / (b c^2 d e^2)) ^ (1 / 2)]^2, {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1,
   (n / (b)) ^ (1 / 7)}, {d, c + 1, (n / (b c^2)) ^ (1 / 5)}, {e, d + 1, (n / (b c^2 d)) ^ (1 / 4)}] +
10 080 Sum[Floor[(n / (b c^2 d e^2 f))], {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b)) ^ (1 / 7)}, {d, c + 1, (n / (b c^2)) ^ (1 / 5)},
   {e, d + 1, (n / (b c^2 d)) ^ (1 / 4)}, {f, e + 1, (n / (b c^2 d e^2)) ^ (1 / 2)}] + 3360
  Sum[Floor[(n / (b c^2 d e)) ^ (1 / 3)]^3, {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b)) ^ (1 / 7)},
   {d, c + 1, (n / (b c^2)) ^ (1 / 5)}, {e, d + 1, (n / (b c^2 d)) ^ (1 / 4)}] +
10 080 Sum[Floor[(n / (b c^2 d e f^2))], {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b)) ^ (1 / 7)}, {d, c + 1, (n / (b c^2)) ^ (1 / 5)},
   {e, d + 1, (n / (b c^2 d)) ^ (1 / 4)}, {f, e + 1, (n / (b c^2 d e)) ^ (1 / 3)}] +
-10 080 Sum[Floor[(n / (b c^2 d e f)) ^ (1 / 2)]^2, {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b)) ^ (1 / 7)}, {d, c + 1, (n / (b c^2)) ^ (1 / 5)},
   {e, d + 1, (n / (b c^2 d)) ^ (1 / 4)}, {f, e + 1, (n / (b c^2 d e)) ^ (1 / 3)}] +
20 160 Sum[Floor[(n / (b c^2 d e f g))], {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b)) ^ (1 / 7)},
   {d, c + 1, (n / (b c^2)) ^ (1 / 5)}, {e, d + 1, (n / (b c^2 d)) ^ (1 / 4)},
   {f, e + 1, (n / (b c^2 d e)) ^ (1 / 3)}, {g, f + 1, (n / (b c^2 d e f)) ^ (1 / 2)}] +
-56 Sum[Floor[(n / (b c)) ^ (1 / 6)]^6, {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b)) ^ (1 / 7)}] +
336 Sum[Floor[(n / (b c d^5))], {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b)) ^ (1 / 7)}, {d, c + 1, (n / (b c)) ^ (1 / 6)}] +
-840 Sum[Floor[(n / (b c d^4)) ^ (1 / 2)]^2, {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b)) ^ (1 / 7)}, {d, c + 1, (n / (b c)) ^ (1 / 6)}] +
1680 Sum[Floor[(n / (b c d^4 e))], {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b)) ^ (1 / 7)},
   {d, c + 1, (n / (b c)) ^ (1 / 6)}, {e, d + 1, (n / (b c d^4)) ^ (1 / 2)}] +
1120 Sum[Floor[(n / (b c d^3)) ^ (1 / 3)]^3, {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b)) ^ (1 / 7)}, {d, c + 1, (n / (b c)) ^ (1 / 6)}] +
3360 Sum[Floor[(n / (b c d^3 e^2))], {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b)) ^ (1 / 7)},
   {d, c + 1, (n / (b c)) ^ (1 / 6)}, {e, d + 1, (n / (b c d^3)) ^ (1 / 3)}] +
-3360 Sum[Floor[(n / (b c d^3 e)) ^ (1 / 2)]^2, {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1,
   (n / (b)) ^ (1 / 7)}, {d, c + 1, (n / (b c)) ^ (1 / 6)}, {e, d + 1, (n / (b c d^3)) ^ (1 / 3)}] +
6720 Sum[Floor[(n / (b c d^3 e f))], {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b)) ^ (1 / 7)},
   {d, c + 1, (n / (b c)) ^ (1 / 6)}, {e, d + 1, (n / (b c d^3)) ^ (1 / 3)},
   {f, e + 1, (n / (b c d^3 e)) ^ (1 / 2)}] + -840 Sum[Floor[(n / (b c d^2)) ^ (1 / 4)]^4,
   {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b)) ^ (1 / 7)}, {d, c + 1, (n / (b c)) ^ (1 / 6)}] +
3360 Sum[Floor[(n / (b c d^2 e^3))], {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1, (n / (b)) ^ (1 / 7)},
   {d, c + 1, (n / (b c)) ^ (1 / 6)}, {e, d + 1, (n / (b c d^2)) ^ (1 / 4)}] +
-5040 Sum[Floor[(n / (b c d^2 e^2)) ^ (1 / 2)]^2, {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1,
   (n / (b)) ^ (1 / 7)}, {d, c + 1, (n / (b c)) ^ (1 / 6)}, {e, d + 1, (n / (b c d^2)) ^ (1 / 4)}] +
10 080 Sum[Floor[(n / (b c d^2 e^2 f))], {b, a + 1, (n) ^ (1 / 8)},
   {c, b + 1, (n / (b)) ^ (1 / 7)}, {d, c + 1, (n / (b c)) ^ (1 / 6)},
   {e, d + 1, (n / (b c d^2)) ^ (1 / 4)}, {f, e + 1, (n / (b c d^2 e^2)) ^ (1 / 2)}] +
3360 Sum[Floor[(n / (b c d^2 e)) ^ (1 / 3)]^3, {b, a + 1, (n) ^ (1 / 8)}, {c, b + 1,
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    (n / (b))^(1 / 7)}, {d, c + 1, (n / (b c))^(1 / 6)}, {e, d + 1, (n / (b c d^2))^(1 / 4)}] +
10 080 Sum[Floor[(n / (b c d^2 e f^2))], {b, a + 1, (n)^(1 / 8)},
   {c, b + 1, (n / (b))^(1 / 7)}, {d, c + 1, (n / (b c))^(1 / 6)},
   {e, d + 1, (n / (b c d^2))^(1 / 4)}, {f, e + 1, (n / (b c d^2 e))^(1 / 3)}] +
-10 080 Sum[Floor[(n / (b c d^2 e f))^(1 / 2)]^2, {b, a + 1, (n)^(1 / 8)},
   {c, b + 1, (n / (b))^(1 / 7)}, {d, c + 1, (n / (b c))^(1 / 6)},
   {e, d + 1, (n / (b c d^2))^(1 / 4)}, {f, e + 1, (n / (b c d^2 e))^(1 / 3)}] +
20 160 Sum[Floor[(n / (b c d^2 e f g))], {b, a + 1, (n)^(1 / 8)}, {c, b + 1, (n / (b))^(1 / 7)},
   {d, c + 1, (n / (b c))^(1 / 6)}, {e, d + 1, (n / (b c d^2))^(1 / 4)},
   {f, e + 1, (n / (b c d^2 e))^(1 / 3)}, {g, f + 1, (n / (b c d^2 e f))^(1 / 2)}] +
336 Sum[Floor[(n / (b c d))^(1 / 5)]^5, {b, a + 1, (n)^(1 / 8)},
   {c, b + 1, (n / (b))^(1 / 7)}, {d, c + 1, (n / (b c))^(1 / 6)}] +
1680 Sum[Floor[(n / (b c d e^4))], {b, a + 1, (n)^(1 / 8)}, {c, b + 1, (n / (b))^(1 / 7)},
   {d, c + 1, (n / (b c))^(1 / 6)}, {e, d + 1, (n / (b c d))^(1 / 5)}] +
-3360 Sum[Floor[(n / (b c d e^3))^(1 / 2)]^2, {b, a + 1, (n)^(1 / 8)},
   {c, b + 1, (n / (b))^(1 / 7)}, {d, c + 1, (n / (b c))^(1 / 6)}, {e, d + 1, (n / (b c d))^(1 / 5)}] +
6720 Sum[Floor[(n / (b c d e^3 f))], {b, a + 1, (n)^(1 / 8)},
   {c, b + 1, (n / (b))^(1 / 7)}, {d, c + 1, (n / (b c))^(1 / 6)},
   {e, d + 1, (n / (b c d))^(1 / 5)}, {f, e + 1, (n / (b c d e^3))^(1 / 2)}] +
3360 Sum[Floor[(n / (b c d e^2))^(1 / 3)]^3, {b, a + 1, (n)^(1 / 8)},
   {c, b + 1, (n / (b))^(1 / 7)}, {d, c + 1, (n / (b c))^(1 / 6)}, {e, d + 1, (n / (b c d))^(1 / 5)}] +
10 080 Sum[Floor[(n / (b c d e^2 f^2))], {b, a + 1, (n)^(1 / 8)},
   {c, b + 1, (n / (b))^(1 / 7)}, {d, c + 1, (n / (b c))^(1 / 6)},
   {e, d + 1, (n / (b c d))^(1 / 5)}, {f, e + 1, (n / (b c d e^2))^(1 / 3)}] +
-10 080 Sum[Floor[(n / (b c d e^2 f))^(1 / 2)]^2, {b, a + 1, (n)^(1 / 8)},
   {c, b + 1, (n / (b))^(1 / 7)}, {d, c + 1, (n / (b c))^(1 / 6)},
   {e, d + 1, (n / (b c d))^(1 / 5)}, {f, e + 1, (n / (b c d e^2))^(1 / 3)}] +
20 160 Sum[Floor[(n / (b c d e^2 f g))], {b, a + 1, (n)^(1 / 8)}, {c, b + 1, (n / (b))^(1 / 7)},
   {d, c + 1, (n / (b c))^(1 / 6)}, {e, d + 1, (n / (b c d))^(1 / 5)},
   {f, e + 1, (n / (b c d e^2))^(1 / 3)}, {g, f + 1, (n / (b c d e^2 f))^(1 / 2)}] +
-1680 Sum[Floor[(n / (b c d e))^(1 / 4)]^4, {b, a + 1, (n)^(1 / 8)},
   {c, b + 1, (n / (b))^(1 / 7)}, {d, c + 1, (n / (b c))^(1 / 6)}, {e, d + 1, (n / (b c d))^(1 / 5)}] +
6720 Sum[Floor[(n / (b c d e f^3))], {b, a + 1, (n)^(1 / 8)},
   {c, b + 1, (n / (b))^(1 / 7)}, {d, c + 1, (n / (b c))^(1 / 6)},
   {e, d + 1, (n / (b c d))^(1 / 5)}, {f, e + 1, (n / (b c d e))^(1 / 4)}] +
-10 080 Sum[Floor[(n / (b c d e f^2))^(1 / 2)]^2, {b, a + 1, (n)^(1 / 8)},
   {c, b + 1, (n / (b))^(1 / 7)}, {d, c + 1, (n / (b c))^(1 / 6)},
   {e, d + 1, (n / (b c d))^(1 / 5)}, {f, e + 1, (n / (b c d e))^(1 / 4)}] +
20 160 Sum[Floor[(n / (b c d e f^2 g))], {b, a + 1, (n)^(1 / 8)}, {c, b + 1, (n / (b))^(1 / 7)},
   {d, c + 1, (n / (b c))^(1 / 6)}, {e, d + 1, (n / (b c d))^(1 / 5)},
   {f, e + 1, (n / (b c d e))^(1 / 4)}, {g, f + 1, (n / (b c d e f^2))^(1 / 2)}] +
6720 Sum[Floor[(n / (b c d e f))^(1 / 3)]^3, {b, a + 1, (n)^(1 / 8)},
   {c, b + 1, (n / (b))^(1 / 7)}, {d, c + 1, (n / (b c))^(1 / 6)},
   {e, d + 1, (n / (b c d))^(1 / 5)}, {f, e + 1, (n / (b c d e))^(1 / 4)}] +
20 160 Sum[Floor[(n / (b c d e f g^2))], {b, a + 1, (n)^(1 / 8)}, {c, b + 1, (n / (b))^(1 / 7)},
   {d, c + 1, (n / (b c))^(1 / 6)}, {e, d + 1, (n / (b c d))^(1 / 5)},
   {f, e + 1, (n / (b c d e))^(1 / 4)}, {g, f + 1, (n / (b c d e f))^(1 / 3)}] +
-20 160 Sum[Floor[(n / (b c d e f g))^(1 / 2)]^2, {b, a + 1, (n)^(1 / 8)},
   {c, b + 1, (n / (b))^(1 / 7)}, {d, c + 1, (n / (b c))^(1 / 6)}, {e, d + 1, (n / (b c d))^(1 / 5)},
   {f, e + 1, (n / (b c d e))^(1 / 4)}, {g, f + 1, (n / (b c d e f))^(1 / 3)}] +
40 320 Sum[Floor[(n / (b c d e f g h))], {b, a + 1, (n)^(1 / 8)}, {c, b + 1, (n / (b))^(1 / 7)}, {d,
    c + 1, (n / (b c))^(1 / 6)}, {e, d + 1, (n / (b c d))^(1 / 5)}, {f, e + 1, (n / (b c d e))^(1 / 4)},
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     {g, f + 1, (n / (b c d e f)) ^ (1 / 3)}, {h, g + 1, (n / (b c d e f g)) ^ (1 / 2)}]


(*
static long Binomial2(double n,int k){double total=1;
    for (int i=1;i≤k;i++)total*=(n-(k-i))/i;
    return (long)(total+epsilon);}
static string lets="bcdefghijklmopqrstuvwxyz";
static void part(int k,string s,int mul,int mul2,int last,int total,int muldiv)
 {if (k==0){var ss=s.Split(new string[] {" "},StringSplitOptions.None);
     var vv=new List<int>();
     foreach (var st in ss)if(st≠"") vv.Add(Int32.Parse(st));
     if (vv.Count==1) Console.WriteLine
       (""+mul*mul2+"/"+muldiv+" Floor[ n^(1/"+vv[0]+")]^"+vv[0]+"+");
     else{var ls=vv[vv.Count-1];
       if (mul<0&&muldiv<0) {mul=-mul;muldiv=-muldiv;} Console.Write
        (""+((mul*mul2)%muldiv==0?""+((mul*mul2)/muldiv):mul*mul2+"/"+muldiv)+
          " Sum[ Floor[ (n / (");
       for (var j=0;j<vv.Count-1;j++) Console.Write(lets[j]+(vv[j]>1?"^"+vv[j]:"")+" ");
       Console.Write("))"+(ls>1?"^(1/"+ls+")":"")+" ]"+(ls>1?"^"+ls+"":"")+", ");
       var div="";
       for (var j=0;j<vv.Count-1;j++){if (j>0) Console.Write(", ");
         Console.Write("{ "+lets[j]+", "+(j==0?"a+1":lets[j-1]+"+1")+
            ","+"(n"+(div≠""?"/("+div+")":"")+")^(1/"+total+") }");
         div+=" "+lets[j]+(vv[j]>1?"^"+vv[j]:"");
         total-=vv[j];} Console.Write(" ]");
       for (var j=0;j<vv.Count;j++)if (vv[j]≠1) {Console.Write("+");break;}
        Console.WriteLine("");} return;} for (int j=k;j>0;j--) part
     (k-j,s+" "+j,((j % 2)==0?-1:1),mul2*(int)Binomial2(k,j),j,total,muldiv);}
static void partfull(int k){Console.WriteLine("d"+k+"x[n_, a_] := ");
  Console.WriteLine(""+(Math.Pow(-1,k))+" a^"+k+"+");
  part(k,"",1,1,1,k,1);}

*)

d8x[10 000, 1]

158 952

Dd[ 10 000, 8, 2]

158 952



d4[n, 1]

$Aborted
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