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

d0[n_, b_] := 1

d1[n_, b_ ] := Floor[n] - b + 1

d2[n_, b_Integer] :=
 (1 - b)^2 +
  -Floor[ n^(1 / 2)]^2 +
  2 Sum [ Floor[ n / m], {m, b, Floor[n^(1 / 2)]}]

d3[n_, b_ ] :=
 (1 - b)^3 +
  Floor[n^(1/3)]^3 +
  3 Sum[Floor[n / s^2], {s, b, Floor[n^(1 / 3)]}] +
  -3 Sum[Floor[Sqrt[Floor[n / s]]]^2, {s, b, Floor[n^(1 / 3)]}] +
  6 Sum[ Floor[n / m / s], {s, b, Floor[n^(1 / 3)]}, {m, s + 1, Floor[Floor[n / s]^(1 / 2)]}]

d4[x_, b_ ] :=
 (-1 + b)^4 +
  -Floor[x^(1/4)]^4 +
  4 Sum[ Floor[x / (u^3)], {u, b, x^(1 / 4)}] +
  -6 Sum[Floor[ Floor[x / (u^2)]^(1 / 2)]^2 , {u, b, x^(1 / 4)}] +
  12 Sum [ Floor[x / (u^2 s)],
    {u, b, x^(1 / 4)}, {s, (u + 1), Floor[Floor[x / (u^2)]^(1 / 2)]}] +
  4 Sum[Floor[Floor[x / u]^(1/3)]^3, {u, b, x^(1 / 4)}] +
  12 Sum[ Floor[x / ( u s^2)], {u, b, x^(1 / 4)}, {s, (u + 1), Floor[Floor[x / u]^(1 / 3)]}] +
  -12 Sum[ Floor[Floor[x / (u s)]^(1 / 2)]^2 , {u, b, x^(1 / 4)}, {s, (u + 1), (x / u)^(1 / 3)}] +
  24 Sum[ Floor[x / (u m s)], {u, b, x^(1 / 4)},
    {s, u + 1, (x / u)^(1 / 3)}, {m, s + 1, (x / (u s))^(1 / 2)}]
```