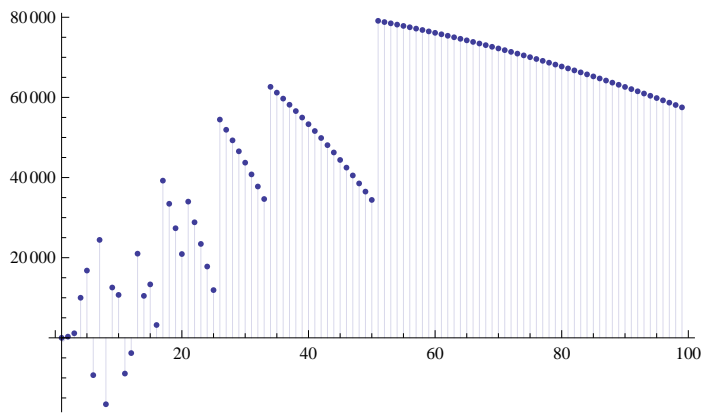```mathematica
E1a[n_, k_, a_, s_] := E1a[n, k, a, s] = Sum[j^(-s) E1a[n / j, k - 1, a, s], {j, 1, n}] -
    a Sum[(j a)^(-s) E1a[n / (a j), k - 1, a, s], {j, 1, n / a}]; E1a[n_, 0, a_, s_] := 1
DDa[n_, k_, s_] := DDa[n, k, s] = Sum[j^(-s) DDa[Floor[n / j], k - 1, s], {j, 1, n}];
DDa[n_, 0, s_] := 1
DDc[n_, k_, b_, s_] :=
 Sum[Binomial[k + j - 1, k - 1] b^(j (1 - s)) E1a[n / (b^j), k, b, s], {j, 0, Log[b, n]}]
E1c[n_, k_, b_, s_] := Sum[(-1)^j Binomial[k, j] b^(j (1 - s)) DDa[n / b^j, k, s], {j, 0, k}]

E1a[100, 1, 100, -1]

-4950

E1c[100, 1, 100, -1]

-4950

DiscretePlot[E1a[100, 3, n, -1], {n, 1, 99}]
```
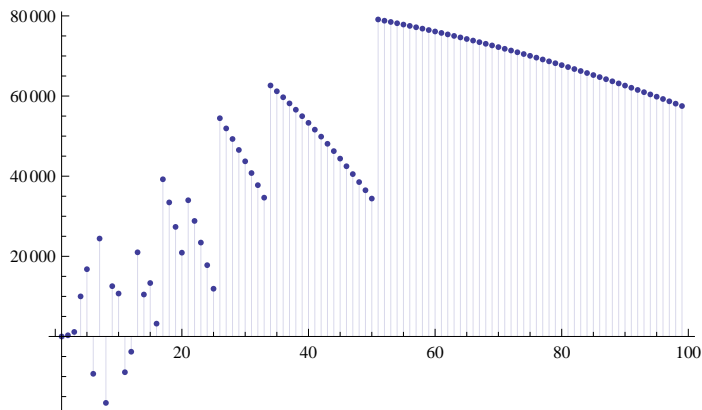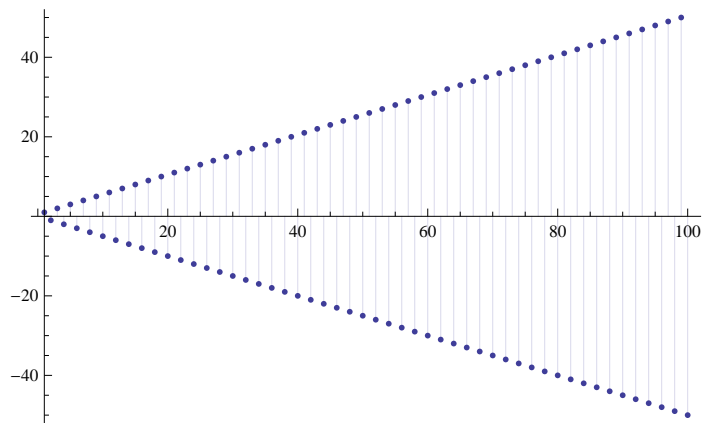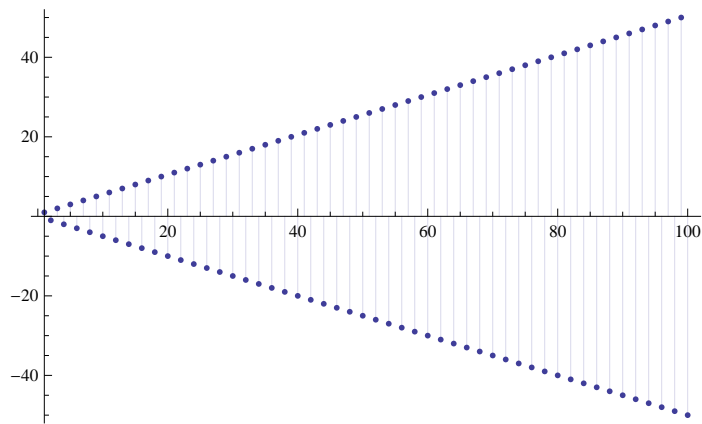


```mathematica
DiscretePlot[E1c[100, 3, n, -1], {n, 1, 99}]
```
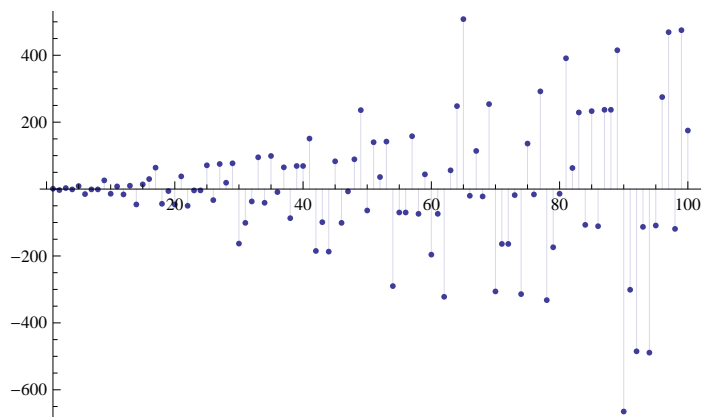
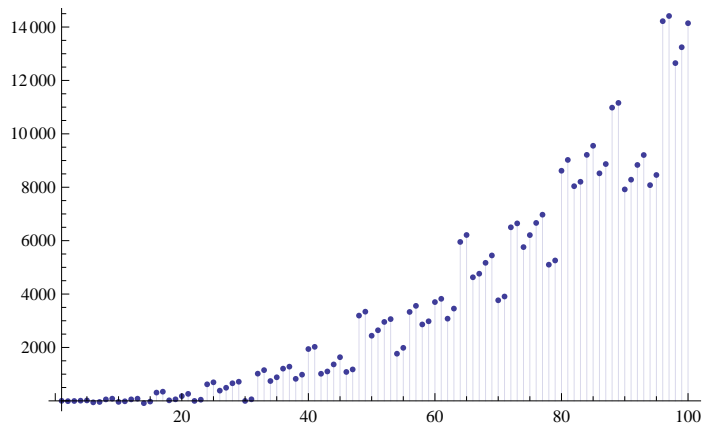**DiscretePlot[E1a[n, 1, 2, -1], {n, 1, 100}]**

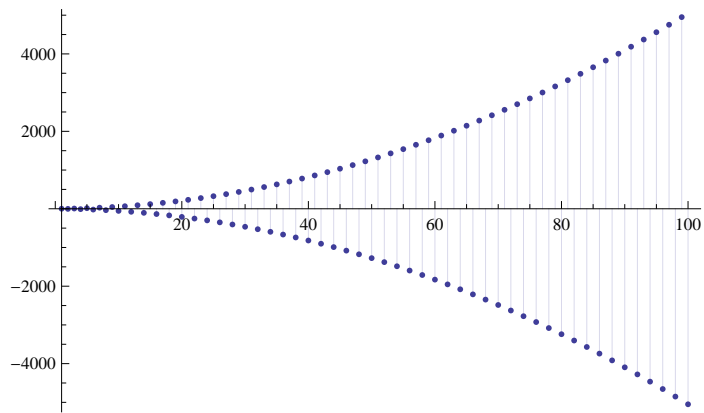**DiscretePlot[DDa[n, 1, -1] - 4 DDa[Floor[n / 2], 1, -1], {n, 1, 100}]**

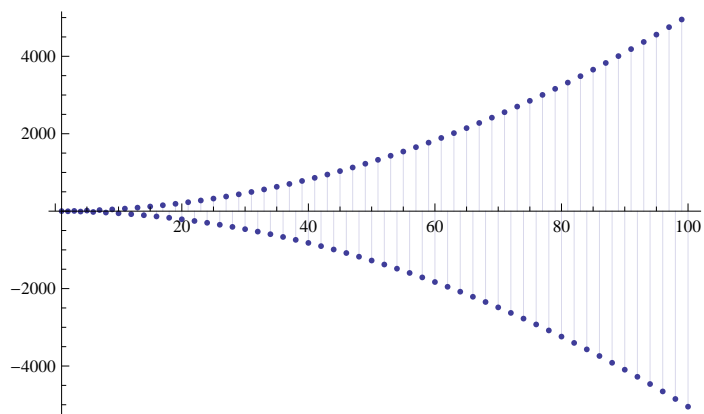**DiscretePlot[E1a[n, 2, 2, -1], {n, 1, 100}]**

DiscretePlot[
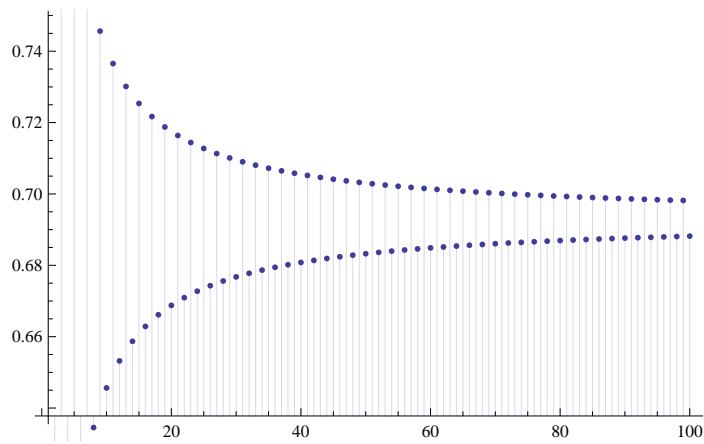**(DDa[n, 2, -1] - 16 DDa[Floor[n / 2], 2, -1] + 64 DDa[Floor[n / 4], 2, -1]), {n, 1, 100}]**

DiscretePlot[E1a[n, 1, 2, -2], {n, 1, 100}]
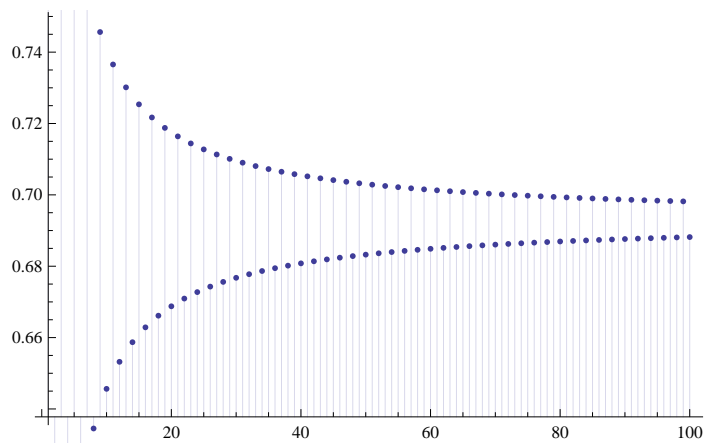

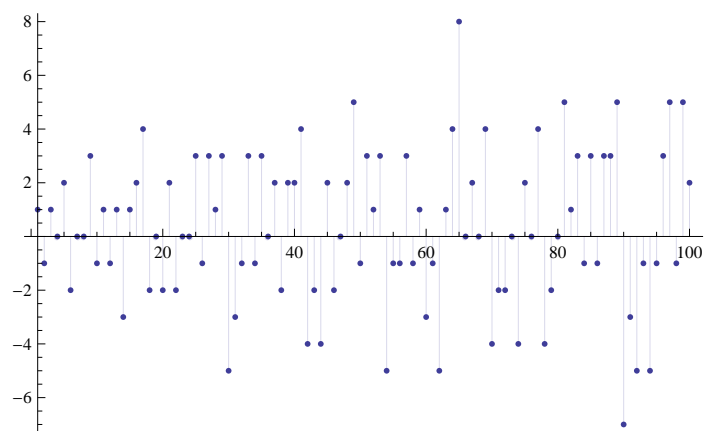**DiscretePlot[DDa[n, 1, -2] - 8 DDa[Floor[n / 2], 1, -2], {n, 1, 100}]**

DiscretePlot[E1a[n, 1, 2, 1], {n, 1, 100}]

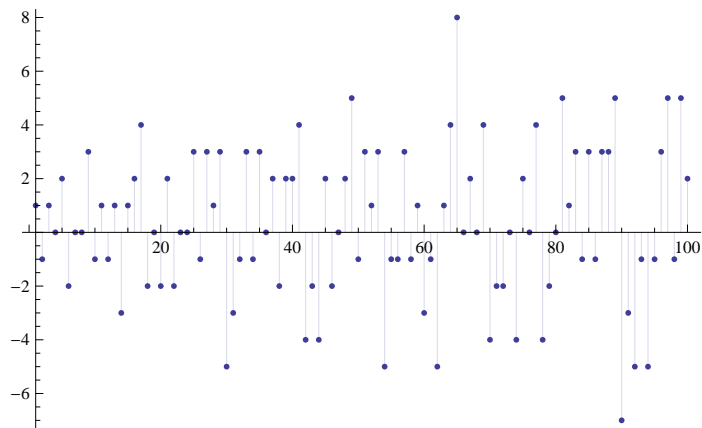**DiscretePlot[DDa[n, 1, 1] - 1 DDa[Floor[n / 2], 1, 1], {n, 1, 100}]**

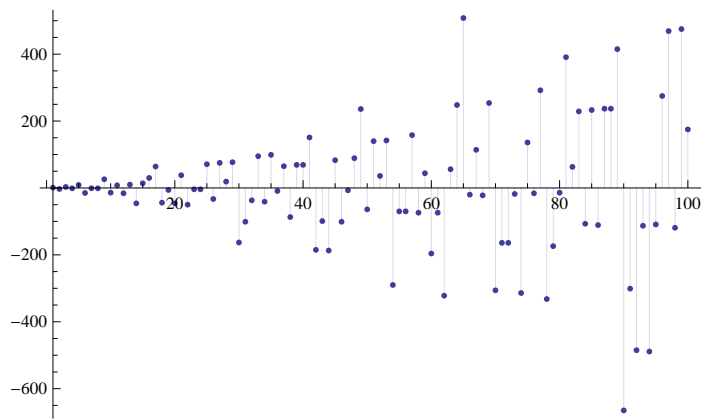**DiscretePlot[E1a[n, 2, 2, 0], {n, 1, 100}]**

DiscretePlot[
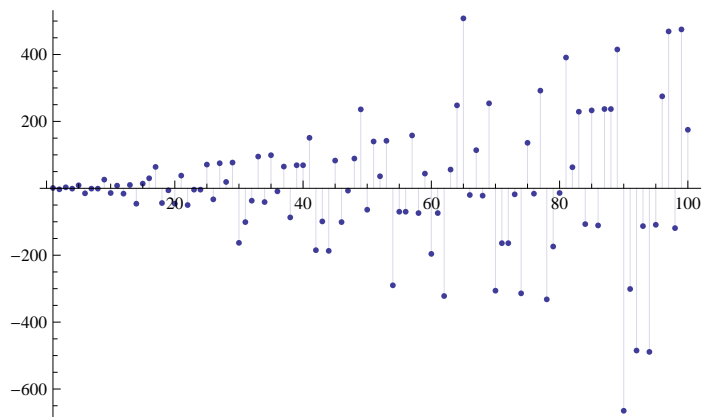 **(DDa[n, 2, 0] - (2 × 2) DDa[Floor[n / 2], 2, 0] + (1 × 4) DDa[Floor[n / 4], 2, 0]), {n, 1, 100}]**
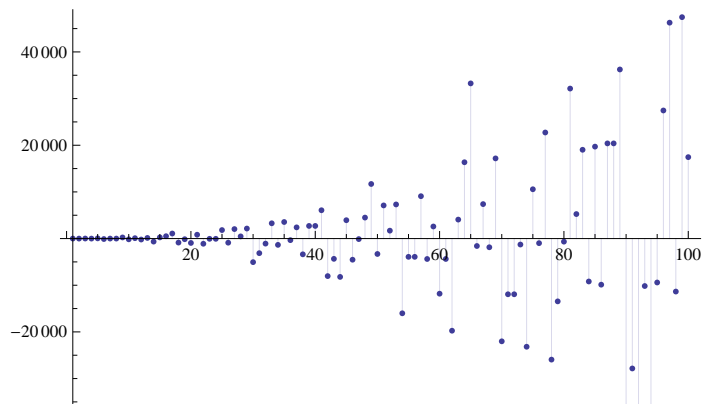

DiscretePlot[E1a[n, 2, 2, -1], {n, 1, 100}]
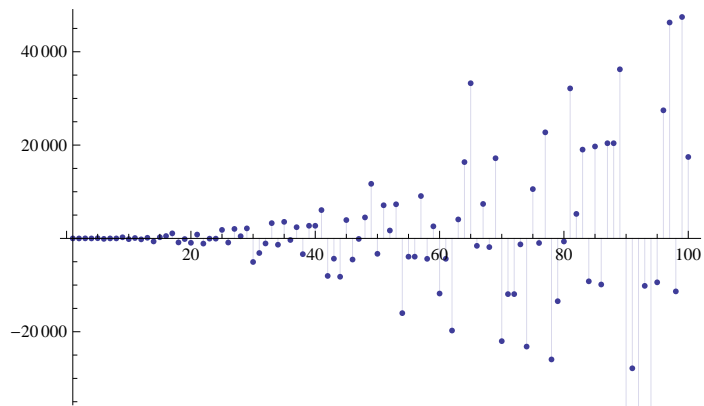

DiscretePlot[
 (DDa[n, 2, -1] - (2 × 2 × 2) DDa[Floor[n / 2], 2, -1] + (1 × 4 × 4) DDa[Floor[n / 4], 2, -1]),
 {n, 1, 100}]

DiscretePlot[E1a[n, 2, 2, -2], {n, 1, 100}]

DiscretePlot[
(DDa[n, 2, -2] - (2 × 2 × 4) DDa[Floor[n / 2], 2, -2] + (1 × 4 × 16) DDa[Floor[n / 4], 2, -2]),
{n, 1, 100}]

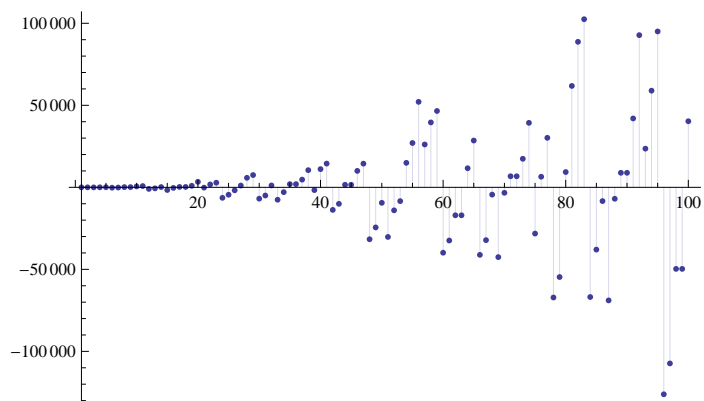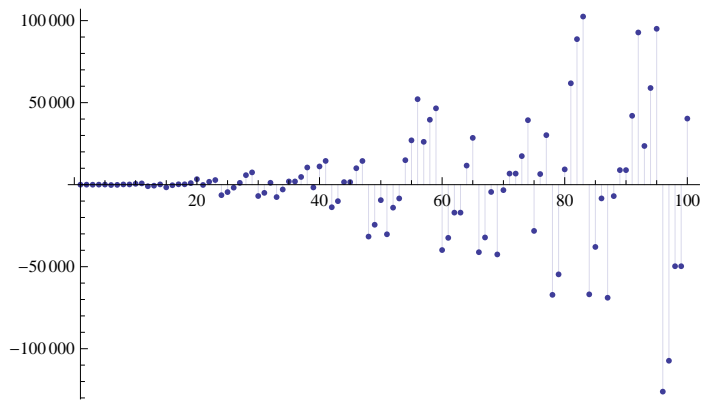**DiscretePlot[E1a[n, 2, 3, -2], {n, 1, 100}]**

```
DiscretePlot[
  ( DDa[n, 2, -2] - (2 × 3 × 9) DDa[Floor[n / 3], 2, -2] + (1 × 9 × 81) DDa[Floor[n / 9], 2, -2]),
  {n, 1, 100}]
```



```
FullSimplify[b^j b^(-j s)]
```

b^{j-js}

```
DDc[100, 3, 1.5, -1]
```

86 914.

```
DDa[100, 3, -1]
```

86 914