```
> eq:=a(n+1)=-1.2*a(n)+50;
```

$$eq := a(n+1) = -1.2\,a(n) + 50$$

```
> rsolve(eq,a(n));
```

$$a(0)\left(-\frac{6}{5}\right)^{n} - \frac{250}{11}\left(-\frac{6}{5}\right)^{n} + \frac{250}{11}$$

```
> ans:=rsolve({eq,a(0)=1000},a(n));
```

$$ans := \frac{10750}{11}\left(-\frac{6}{5}\right)^{n} + \frac{250}{11}$$

```
> aa:=unapply(ans,n);
```

$$aa := n \rightarrow \frac{10750}{11}\left(-\frac{6}{5}\right)^{n} + \frac{250}{11}$$

```
> aa(0);
```

$$1000$$

```
> aa(50);evalf(%);
```

$$\frac{631930613615033174912331576548445597832 6}{710542735760100185871124267578125}$$

$$8.893632738\ 10^{6}$$

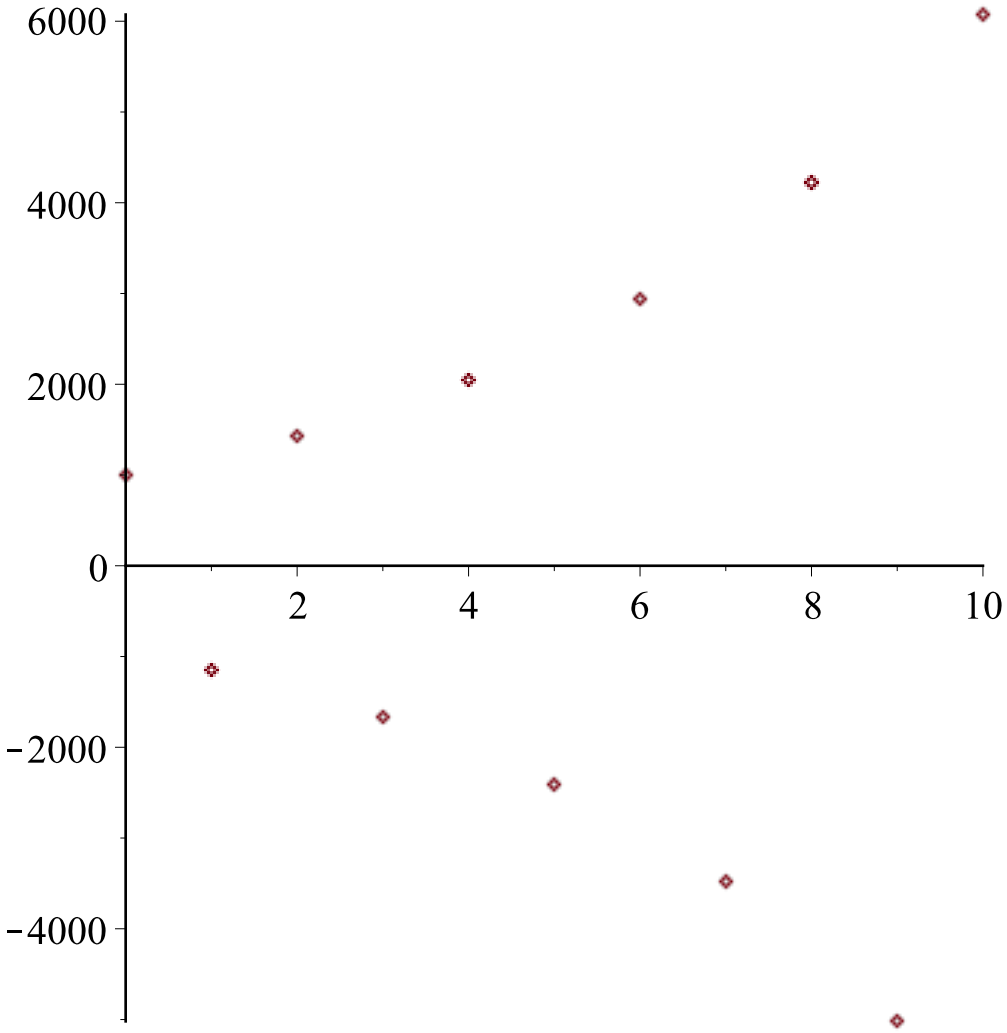
```
> N:=10;
```

$$N := 10$$

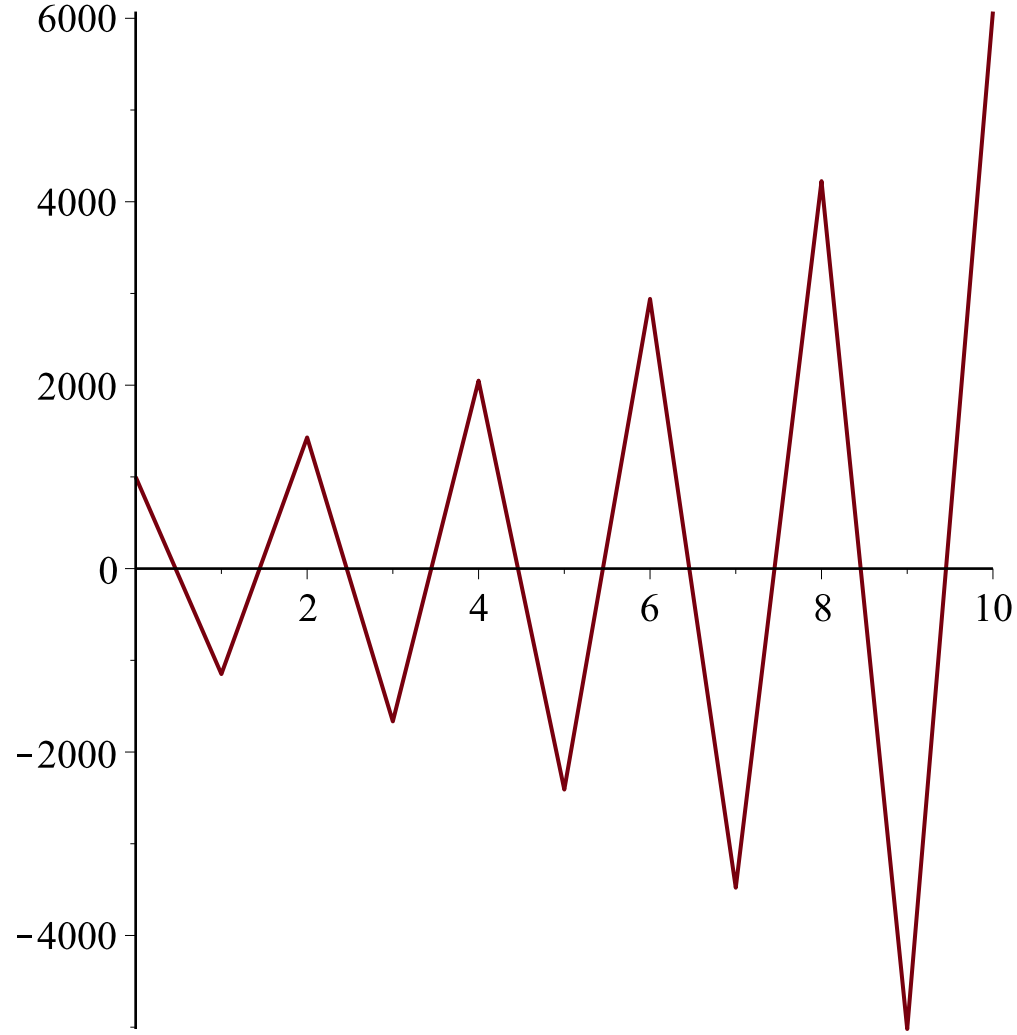
```
> [n,aa(n)]$n=0..N;
```

$$[0, 1000], [1, -1150], [2, 1430], [3, -1666], \left[4, \frac{10246}{5}\right], \left[5, -\frac{60226}{25}\right], \left[6, \frac{367606}{125}\right], \left[7, -\frac{2174386}{625}\right], \left[8, \frac{13202566}{3125}\right], \left[9, -\frac{78434146}{15625}\right], \left[10, \frac{474511126}{78125}\right]$$

```
> plot([[n,aa(n)]$n=0..N],style=point);
```




```
> plot([[n,aa(n)]$n=0..N]);
```




```
> eq1:=S(n+1)=S(n)+0.06*S0;
```

$$eq1 := S(n+1) = S(n) + 0.06\,S0$$

```
> ans:=rsolve({eq1,S(0)=S0},S(n));
```

$$ans := \frac{47}{50}\,S0 + \frac{3}{50}\,S0\,(n+1)$$

```
> A:=unapply(ans,n,S0);
```

$$A := (n, S0) \rightarrow \frac{47}{50}\,S0 + \frac{3}{50}\,S0\,(n+1)$$

```
> A(1,S0);evalf(%);
```

$$\frac{53}{50}\,S0$$

$$1.060000000\,S0$$

```
> eq2:=S(n+1)=S(n)+0.04/12*S(n);
```

$$eq2 := S(n+1) = 1.003333333\,S(n)$$

```
> ans:=rsolve({eq2,S(0)=S0},S(n));
```

$$ans := S0\left(\frac{1003333333}{1000000000}\right)^{n}$$

```
> B:=unapply(ans,n,S0);
```

$$B := (n, S0) \rightarrow S0 \left(\frac{1003333333}{1000000000} \right)^n$$

```
> evalf(B(12,S0));;
```

$$1.040741539\ S0$$

```
> eq3:=S(n+1)=S(n)+0.04/4*S(n);
```

$$eq3 := S(n+1) = 1.010000000\ S(n)$$

```
> ans:=rsolve({eq3,S(0)=S0},S(n));
```

$$ans := S0 \left(\frac{101}{100} \right)^n$$

```
> C:=unapply(ans,n,S0);
```

$$C := (n, S0) \rightarrow S0 \left(\frac{101}{100} \right)^n$$

```
> evalf(A(1,S0));evalf(B(12,S0));evalf(C(4,S0));
```

$$1.060000000\ S0$$
$$1.040741539\ S0$$
$$1.040604010\ S0$$

```
> evalf(A(5,S0));evalf(B(12*5,S0));evalf(C(4*5,S0));
```

$$1.300000000\ S0$$
$$1.220996570\ S0$$
$$1.220190040\ S0$$

```
> evalf(A(10,S0));evalf(B(12*10,S0));evalf(C(4*10,S0));
```

$$1.600000000\ S0$$
$$1.490832623\ S0$$
$$1.488863734\ S0$$

```
> evalf(A(15,S0));evalf(B(12*15,S0));evalf(C(4*15,S0));
```

$$1.900000000\ S0$$
$$1.820301519\ S0$$
$$1.816696699\ S0$$

```
> evalf(A(20,S0));evalf(B(12*20,S0));evalf(C(4*20,S0));
```

$$2.200000000\ S0$$
$$2.222581910\ S0$$
$$2.216715217\ S0$$

```
> eq:=S(n+1)=S(n)+0.05/12*S(n)-R;
```

$$eq := S(n+1) = 1.004166667\ S(n) - R$$

```
> ans:=rsolve({eq,S(0)=200000},S(n));
```

$$ans := 200000 \left(\frac{1004166667}{1000000000} \right)^n + \frac{1000000000}{4166667} R - \frac{1000000000}{4166667} R \left(\frac{1004166667}{1000000000} \right)^n$$

```
> sol:=unapply(ans,n,R);
```

$$sol := (n, R) \rightarrow 200000 \left(\frac{1004166667}{1000000000} \right)^n + \frac{1000000000}{4166667} R - \frac{1000000000}{4166667} R \left(\frac{1004166667}{1000000000} \right)^n$$

```
> evalf(solve(sol(360,R)=0,R));
```

$$1073.643295$$

```
> 360*1073.643295;
```

$$L \quad 3.865115862\ 10^{5}$$