

Системы уравнений

$$\begin{aligned}a(t) &= -g \\v(t) &= -a(t) * t + v_0 \\s(t) &= -\frac{a(t) * t^2}{2} + v_0 * t + s_0\end{aligned}$$

Формула в логике предикатов

```
free_fall:equation[initial_velocity -> 0,  
                    initial_distance -> 5000, time -> 10]  
free_fall[?velocity]
```

Кортежи базы данных

```
(t, velocity, distance)  
(0, 0.0, 5000.0)  
(1, -9.8, 4995.1)  
(2, -19.6, 4980.4)  
(3, -29.4, 4955.9)  
(4, -39.2, 4921.6)
```

Алгоритм

```
def free_fall(a=9.8, t=10, init_velocity=0, init_dist=5000):  
    velocity = -a * t + init_velocity  
    distance = - a/2 * (t ** 2) + init_velocity * t + init_dist  
    print(t, velocity, distance)  
    return t, velocity, distance  
  
free_fall()
```