# Idleon Formulas v0.0.1
## on Legends of Idleon v1.14

21/05/2021

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# 1　Introduction

**This PDF is interactive if you download it, which might be more comfortable to use.**

**TODO**

## 1.1　Special thanks

Xores, LiuLangZhe, Rockangelz and the wiki team as well as discord's mods!

*and LavaFlame2 obviously.*

## 1.2　Last modifications

2021/05/25　Add cauldron new bubble cost formula + some typo.

2021/05/24　Add cost formula for p2w tab (thx LiuLangZhe).

2021/05/23　Add Stamps, Statues and others formulas + some references.

2021/05/22　Init

# 2  Global

## 2.1  XP needed to lvl up

$$XP_{Class} = \left\lfloor \left(15 + lvl^{1.9} + 11 \times lvl\right) \times \left(1.208 - \min\left\{0.164, \frac{0.215 \times lvl}{lvl + 100}\right\}\right)^{lvl} - 15 \right\rfloor$$

$$XP_{Skill} = \left\lfloor \left(15 + lvl^{2} + 15 \times lvl\right) \times \left(1.225 - \min\left\{0.164, \frac{0.135 \times lvl}{lvl + 50}\right\}\right)^{lvl} - 30 \right\rfloor$$

$$XP_{Smithing} = \left\lfloor \left(15 + lvl^{2} + 13 \times lvl\right) \times \left(1.225 - \min\left\{0.164, \frac{0.135 \times lvl}{lvl + 50}\right\}\right)^{lvl} - 30 \right\rfloor$$

## 2.2  Fighting Formulas

### 2.2.1  Damage done

$$Damage_{max} =$$
$$Damage_{min} = Damage_{max} \times Mastery$$

### 2.2.2  Damage taken per hit

$$Damage = \left\lceil \frac{attack_{enemy} - 2.5 \times defense^{0.8}}{\max\left\{1, 1 + \frac{defense^{1.5}}{100} \times \frac{defense}{\max\{1, attack_{enemy}\}}\right\}} \right\rceil$$

### 2.2.3  AFK damage cap

**TODO**

### 2.2.4  Food Consumption

**TODO**

### 2.2.5  Hourly Kill Cap

**TODO**

### 2.2.6  % chance to hit depending on the accuracy

**TODO**

# 3 Talents

## 3.1 Star Talents

### 3.1.1 Stonks!

$$\text{Points} = \frac{130 \times x}{x + 50}$$
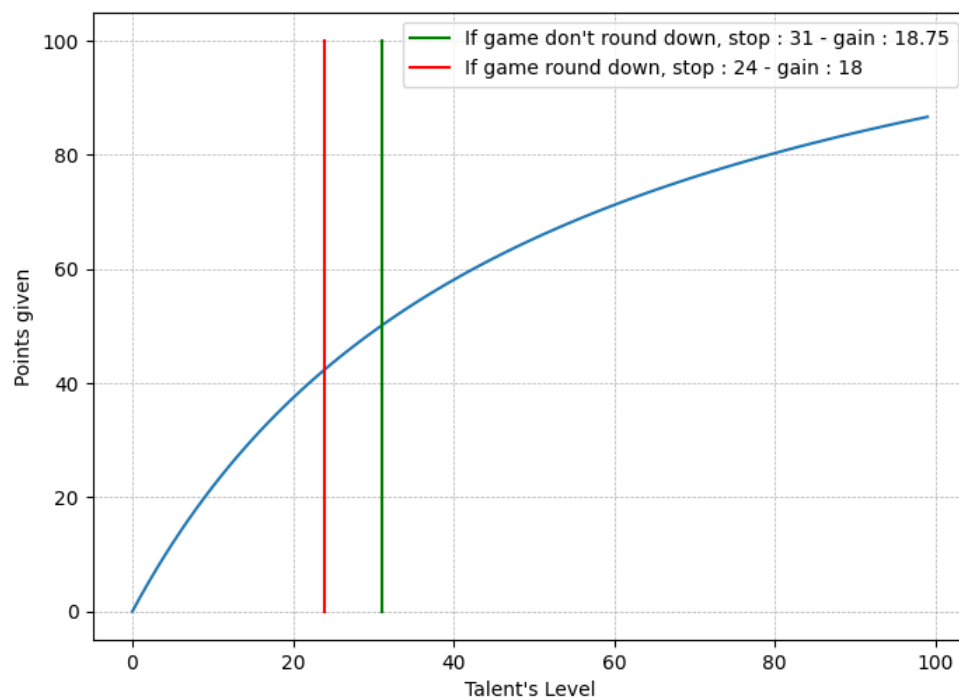


**Figure 3.1.1:** Where to stop leveling up Stonks!

# 4 Alchemy

## 4.1 Liquid & Cauldron

### 4.1.1 Liquid

$$\text{liquid}_{/hour} = \left(1 + \frac{\text{decant}_\% + \text{RLP2W}_\% + \text{vial}_\%}{100}\right) \times \left(1 + \frac{\text{stamp}_\% + \sum\left((\text{alchLvl} * 2 + 4)^{0.65}\right)}{100}\right)$$

- $\text{RLP2W}_\%$ is P2W Liquid Regen, see 4.3

Multiply $\text{liquid}_{/hour}$ by 1.5 if you bought the gem upgrade.

### 4.1.2 Cauldron

$$\text{newBubbleCost} = 3 + (3n)^{2.2} \times 1.3^n$$

- $n$ is your number of bubbles unlocked.

**TODO**

## 4.2   Bubble

**TODO**

## 4.3   P2W tab

Every p2w related formulas

### 4.3.1   Cauldron

$$\text{regen}_\% = \frac{16 + 0.5 \times (\text{regenLvl} - 1)}{15} \times \text{regenLvl} \times 3$$

$$\text{regen}_{\text{Cost}} = \left\lfloor 2500 \left( 1.15 - \frac{0.117\text{regenLvl}}{100 + \text{regenLvl}} \right)^{\text{regenLvl}} \right\rceil$$

$$\text{newBubble} = 1 + \frac{\text{newBubbleLvl} \times 2.5}{\text{newBubbleLvl} + 100}$$

$$\text{newBubble}_{\text{Cost}} = \left\lfloor 3200 \left( 1.18 - \frac{0.145}{100 + \text{newBubbleLvl}} \right)^{\text{newBubbleLvl}} \right\rceil$$

$$\text{boostReqLow}_\% = \frac{70 \times \text{boostLvl}}{100 + \text{boostLvl}}$$

$$\text{boostReqLow}_{\text{Cost}} = \left\lfloor 3750 \left( 1.2 - \frac{0.14\text{boostLvl}}{100 + \text{boostLvl}} \right)^{\text{boostLvl}} \right\rceil$$

### 4.3.2 Liquid

$$\text{regen}_\% = \frac{400 \times \text{regenLvl}}{100 + \text{regenLvl}}$$

$$\text{regen}_{\text{Cost}} = \left\lfloor 2500 \left( 1.19 - \frac{0.135\text{regenLvl}}{100 + \text{regenLvl}} \right)^{\text{regenLvl}} \right\rfloor$$

$$\text{cap} = \text{capLvl}$$

$$\text{cap}_{\text{Cost}} = \left\lfloor 3500 \left( 1.2 - \frac{0.13\text{capLvl}}{100 + \text{capLvl}} \right)^{\text{capLvl}} \right\rfloor$$



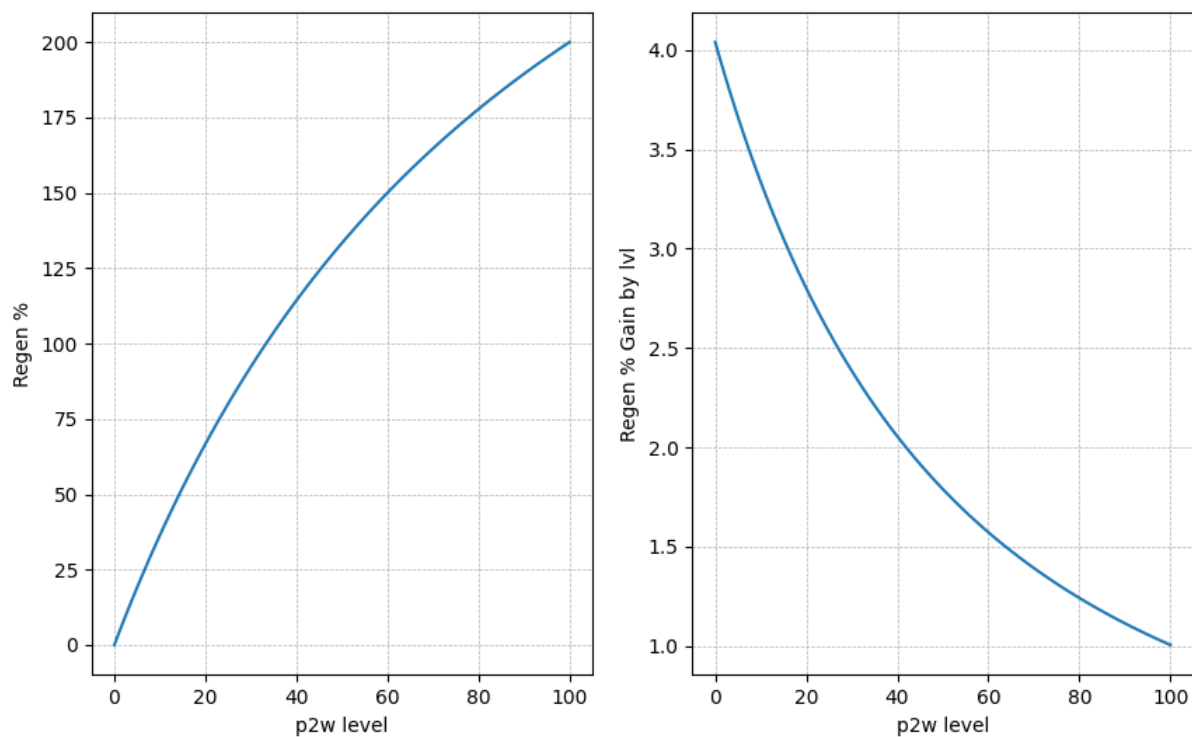**Figure 4.3.1:** How much regen you gain with p2w

### 4.3.3 Vials

$$\text{cap} = \text{capLvl}$$

$$\text{cap}_{\text{Cost}} = \left\lfloor 10000 \times 2^{\text{capLvl}} \right\rfloor$$

$$\text{rng} = \frac{250 \times \text{rngLvl}}{100 + \text{rngLvl}}$$

$$\text{rng}_{\text{Cost}} = \left\lfloor 5000 \times 1.25^{\text{rngLvl}} \right\rfloor$$

**Note:** rng doesn't work at the moment (v1.14).

### 4.3.4 Player

$$\text{AlchSpeed}_\% = \frac{35 \times \text{AlchSpeedLvl}}{100 + \text{AlchSpeedLvl}}$$

$$\text{AlchSpeed}_{\text{Cost}} = \left\lfloor 4000 \left( 1.15 - \frac{0.1\text{AlchSpeedLvl}}{100 + \text{AlchSpeedLvl}}^{\text{AlchSpeedLvl}} \right) \right\rfloor$$

$$\text{ExtraXP}_\% = \frac{11 + 0.5 \times (\text{ExtraXPLvl} - 1)}{10} \times \text{ExtraXPLvl}$$

$$\text{ExtraXP}_{\text{Cost}} = \left\lfloor 6000 \left( 1.15 - \frac{0.09\text{AlchSpeedLvl}}{100 + \text{AlchSpeedLvl}}^{\text{AlchSpeedLvl}} \right) \right\rfloor$$

# 5 Post Office

## 5.1 Simple Shippin Orders

**TODO**

## 5.2 Plan-it Express Orders

**TODO**

## 5.3 Dudes Next Door

**TODO**

## 5.4   Shipments

**Beware, the prowess effect in each Shipment affect only the concerned skill although it's only written "prowess".**

### 5.4.1   Civil War Memory

$$\text{damage}_{base} = \text{lvl}$$
$$\text{fightGain}_{\%} = 13 \times \frac{\text{lvl} - 25}{\text{lvl} - 25 + 200}$$
$$\text{crit}_{\%} = 10 \times \frac{\text{lvl} - 100}{\text{lvl} - 100 + 200}$$

### 5.4.2   Locally Sourced Organs

$$\text{maxHP} = 1 + \left\lfloor \frac{\text{lvl}}{2} \right\rfloor$$
$$\text{maxHP}_{\%} = 0.1(\text{lvl} - 25)$$
$$\text{selfHeal}_{\%} = 25 \times \frac{\text{lvl} - 100}{\text{lvl} - 100 + 200}$$

### 5.4.3   Magician Starterpack

$$\text{maxMP} = 1 + \left\lfloor \frac{\text{lvl}}{3} \right\rfloor$$
$$\text{maxHP}_{\%} = 0.1(\text{lvl} - 25)$$
$$\text{fasterCD} = 17 \times \frac{\text{lvl} - 100}{\text{lvl} - 100 + 200}$$

### 5.4.4   Bolvl of Unwanted Stats

$$\text{accuracy} = 0.25\text{lvl}$$
$$\text{defence} = 0.3(\text{lvl} - 25)$$
$$\text{MobExp}_{\%} = 29 \times \frac{\text{lvl} - 100}{\text{lvl} - 100 + 170}$$

### 5.4.5   Dwarven Supplies

$$\text{efficiency}_{mining} = 50 \times \frac{\text{lvl}}{\text{lvl} + 200}$$
$$\text{prowess}_{\%} = 40 \times \frac{\text{lvl} - 25}{\text{lvl} - 25 + 150}$$
$$\text{AFKGain}_{mining} = 15 \times \frac{\text{lvl} - 100}{\text{lvl} - 100 + 175}$$

### 5.4.6   Blacksmith Box

$$\text{XP}_{Smithing} = 50 \times \frac{\text{lvl}}{\text{lvl} + 200}$$
$$\text{prodSpeed}_{\%} = 75 \times \frac{\text{lvl} - 25}{\text{lvl} - 25 + 200}$$
$$\text{toCraft}_{\%} = 30 \times \frac{\text{lvl} - 100}{\text{lvl} - 100 + 150}$$

### 5.4.7 Taped Up Timber

$$\text{efficiency}_{\text{choppin}} = 50 \times \frac{\text{lvl}}{\text{lvl} + 200}$$

$$\text{prowess}_{\%} = 40 \times \frac{\text{lvl} - 25}{\text{lvl} - 25 + 150}$$

$$\text{AFKGain}_{\text{choppin}} = 15 \times \frac{\text{lvl} - 100}{\text{lvl} - 100 + 175}$$

### 5.4.8 Carepack From Mum

$$\text{notConsume}_{\%} = 23 \times \frac{\text{lvl}}{\text{lvl} + 200}$$

$$\text{hFoodEffect}_{\%} = 30 \times \frac{\text{lvl} - 25}{\text{lvl} - 25 + 150}$$

$$\text{pFoodEffect}_{\%} = 30 \times \frac{\text{lvl} - 100}{\text{lvl} - 100 + 175}$$

### 5.4.9 Sealed Fishheads

$$\text{efficiency}_{\text{fishing}} = 50 \times \frac{\text{lvl}}{\text{lvl} + 200}$$

$$\text{prowess}_{\%} = 40 \times \frac{\text{lvl} - 25}{\text{lvl} - 25 + 150}$$

$$\text{AFKGain}_{\text{fishing}} = 15 \times \frac{\text{lvl} - 100}{\text{lvl} - 100 + 175}$$

### 5.4.10 Potion Package

$$\text{brewSpeed}_{\%} = 70 \times \frac{\text{lvl}}{\text{lvl} + 200}$$

$$\text{alchXP}_{\%} = 60 \times \frac{\text{lvl} - 25}{\text{lvl} - 25 + 150}$$

$$\text{craniumTime} = 0.1(\text{lvl} - 100)$$

### 5.4.11 Bug Hunting Supplies

$$\text{efficiency}_{\text{catching}} = 50 \times \frac{\text{lvl}}{\text{lvl} + 200}$$

$$\text{prowess}_{\%} = 40 \times \frac{\text{lvl} - 25}{\text{lvl} - 25 + 150}$$

$$\text{AFKGain}_{\text{catching}} = 15 \times \frac{\text{lvl} - 100}{\text{lvl} - 100 + 175}$$

### 5.4.12 Non Predatory Loot Box

$$\text{dropRate}_{\%} = 50 \times \frac{\text{lvl}}{\text{lvl} + 200}$$

$$\text{Luck} = 0.25(\text{lvl} - 25)$$

$$\text{crystalSpawn}_{\%} = 65 \times \frac{\text{lvl} - 100}{\text{lvl} - 100 + 200}$$

# 6 Construction

# 7 Worship

# 8 Other

## 8.1 Teleportation Cap

$$\text{TP}_{cap} = 21(1+n)$$

Where $n$ is the number of time you bought Daily Teleports.

## 8.2 Statues

$$\text{Cost} = \left\lfloor lvl^{1.17} \times 1.35^{\frac{lvl}{10}} + 1 \right\rceil$$
$$\text{Bonus} = \lfloor \text{Base} \times lvl \rfloor$$

## 8.3 Stamps

$$\text{baseCost}_{Coin} = \text{Price}_{base} \times \left(1 - \frac{\text{bribe}}{100}\right)$$

As of v1.14, the bribe effect is 8%, not 5%.

$$\text{Cost}_{Coin} = \left(1 - \frac{vial_\%}{100}\right) \times \left\lfloor \text{baseCost}_{Coin} \times \left(i_{10} - \left(\frac{lvl}{lvl + 5 * \text{lvlRange}} \times 0.25\right)\right)^{lvl \times \frac{10}{\text{lvlRange}}} \right\rfloor$$
$$\text{Cost}_{Material} = \left\lfloor \text{baseCost}_{Material} \times i_8^{\left\lceil \frac{lvl}{\text{lvlRange}-1} \right\rceil^{0.8}} \right\rfloor \times \max\left\{0.1, 1 - \frac{vial_\%}{100}\right\}$$

- $vial_\%$ is the Blue Flav vial effect.
- $lvlRange$ is the number of time you can lvl up a stamp before having to pay using materials.
- $i_8$ and $i_{10}$ are value you can find in the code or in the wiki, look for data-i in the .stampdiv of the stamp you want to know about.

## 8.4 Forge

**TODO**

# References

[1] LavaFlame2. Legends of Idleon.

[2] Idleon Wiki.

[3] Jeremy Criquet. Idleon Calculator.

[4] Zaghrenaut#9386. Idleon Post Office Calculator.

[5] LiuLangZhe#9086. Cumulative Cost Calculator.