**Mana cost of a spell:**

***Can be changed…***

Reasoning:

That the mana cost should be related to the damage is obvious but it should also be affected by the probability of this damage being dealt so that 10 guaranteed damage costs more than 10 easily dodge-able damage. This probability should be determined via playtesting.

The reason for square-rooting the d\*p is because spells with a greater cost should be more value than cheap spells. This is mostly to discourage spam-tactics.

Finally, the \* 7 is just to make the overall mana cost within reasonable levels with 100 as a max.

If the cost of a spell is found to be over 100 – the damage or dodge-ability should be re-thought or mechanics re-designed.

Explanation:

Use: <https://captaincalculator.com/math/root/nth-root-calculator/> to find nth roots

M = mana cost

D = average damage dealt as a result of the spell being cast

P = the decimal probability of this average damage being dealt

Example 1:

A spell fills 1/3 of the screen with a death laser that always deals 50 damage.

D = 50

P = 1/3

= 90.3378250887

Rounded to the nearest integer = **90** mana

Example 2:

A spell launches 3 projectiles each dealing 20 damage.

Play testing found that the most common event was the opponent being hit by two of the projectiles. This was found to happen 1/5 of the times the spell was cast.

D = 20 \* 2 = 40

P = 1/5

= 46.3541836737

Rounded to the nearest integer = **46** mana