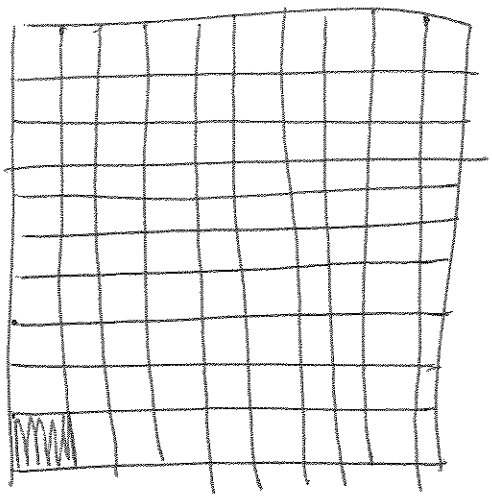
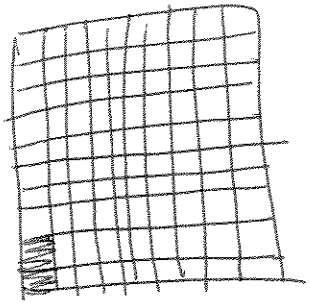
Think of a grid approach.



① original problem

has one grid square to represent "non-water stuff" and other 99 squares represent water
⇒ ∃ 99% water in substance

② evaporation occurs



Now, water is only 98% and "non-water stuff" makes up the other 2 squares.

ex Let's say the original substance had 1 cup oil as its "non-water stuff". Then this is the same amt in the "after evaporation" substance, but the 1 cup oil now makes up 2 parts out of 100.

⇒ new substance = 1 cup water + ? cups water

1 cup = 2 parts

⇒ 49 cups = 98 parts

⇒ there are 49 cups of water in ②
& there were 99 cups of water in ①

$\Rightarrow$ in (2) $\frac{49}{100} = 49\%$ water

We went from 99 cups water, in our example, to 49 cups water which means 50 out of the original 99 cups water has evaporated $\Leftrightarrow 0.\overline{50} = 50.\overline{50}\%$ of the original water evaporated

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In general, if we have a solution w/ $n\%$ water, then some water evaporates leaving $n\%$ water, the amt of water evaporated will be:

$$1 - \frac{\frac{n(100-n)}{(100-m)}}{n} = 1 - \frac{n(100-n)}{n(100-m)}$$

$$= \frac{100(n-m)}{n(100-m)}$$

(as a relative amt)

(f) If we know $m+1 = n$ $\Leftrightarrow m = n-1$, then

$$f(n) = 1 - \frac{(n-1)(100-n)}{n(100-(n-1))} = 1 - \frac{(n-1)(100-n)}{n(101-n)}$$

$$\Leftrightarrow f(n) = \frac{100}{n(101-n)}$$

$f(n)$ is amt of water that evaporated (relative #)
