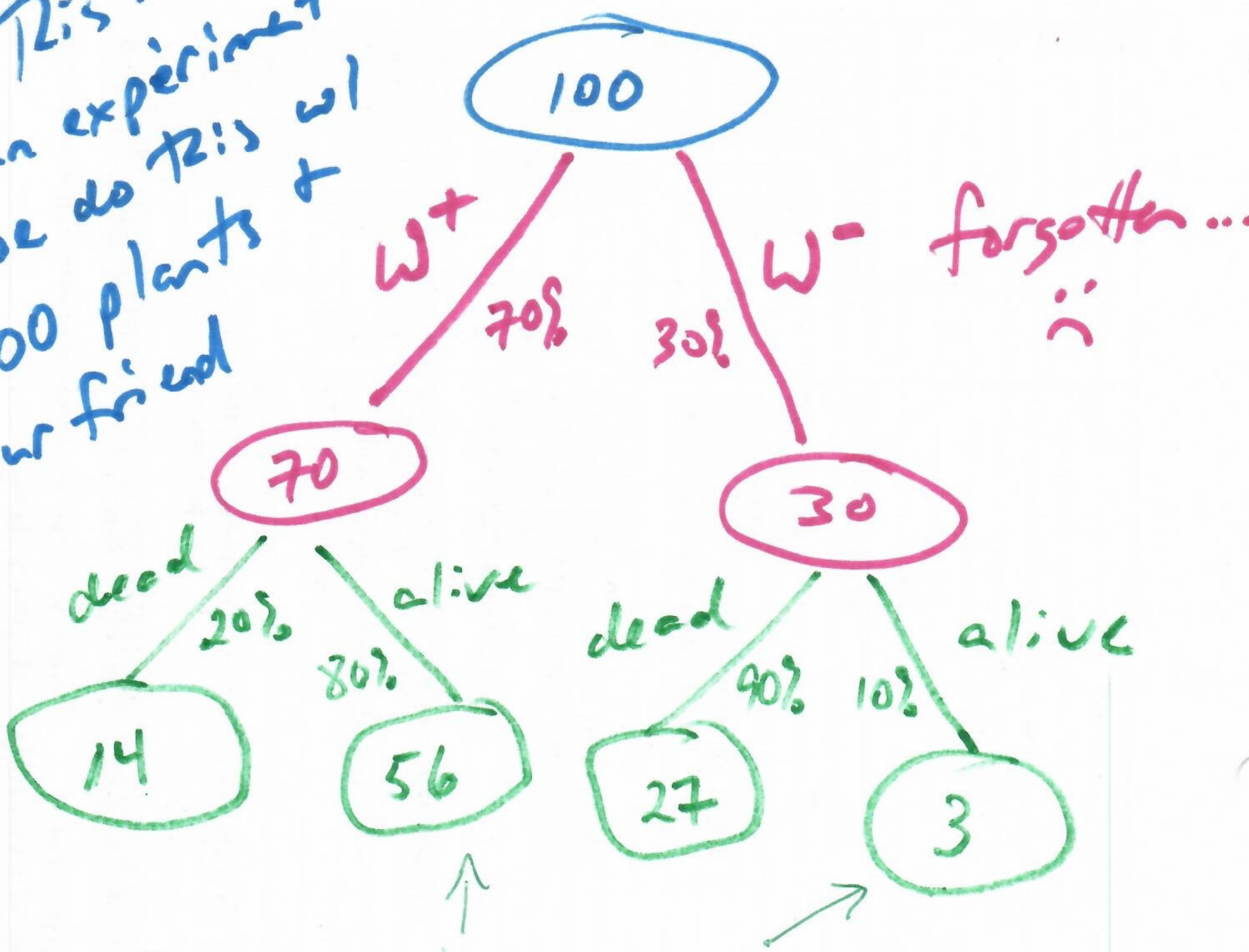
This is like an experiment where we do this w/ 100 plants & our friend




a) Probability that a plant survives the week:

$$\text{Prob} = \frac{56+3}{100} = \frac{59}{100} = .59$$

b) Probability that a dead plant was forgotten by our friend

$$\text{Prob} = \frac{27}{14+27} \begin{array}{l}\leftarrow \text{the forgotten amongst} \\ \leftarrow \text{the dead.}\end{array} = \frac{27}{41}$$

c. Probability that a ~~de~~ plant our friend forgot is dead:

$$\text{Prob} = \frac{27}{30} \begin{matrix} \leftarrow \text{dead amongst} \\ \leftarrow \text{the forgotten} \end{matrix} = 0.90$$

90% chance.

"Chances" are percentages;

"Probabilities" are numbers between 0 & 1.

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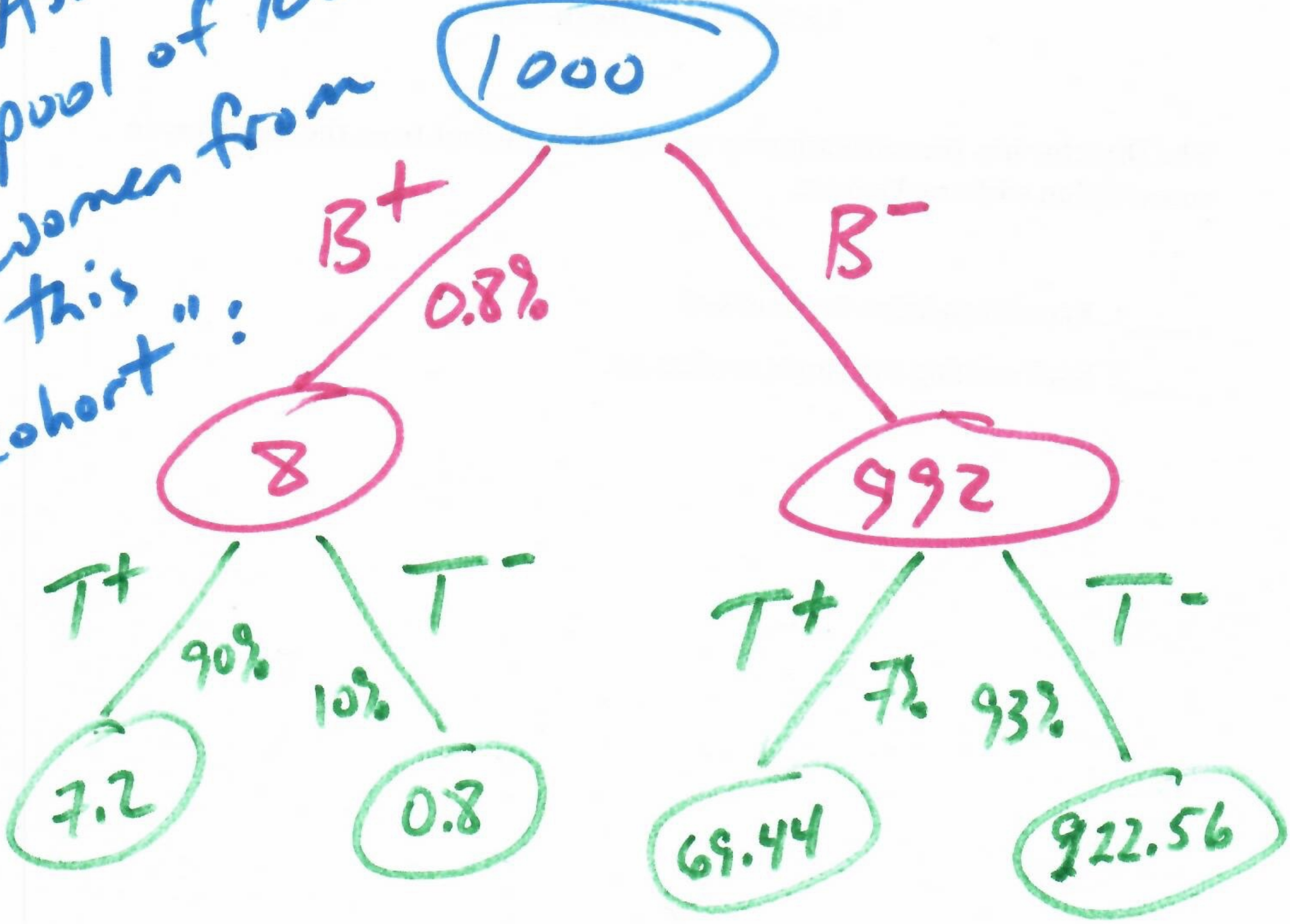
Now we move on to the breast cancer problem....

Assume a pool of 1000 women from this "cohort":




So the probability that a woman with a positive test result actually has breast cancer is

$$\text{Prob} = \frac{7.2}{7.2 + 69.44}$$

← women with B+ amongst

← all women testing positive

$$= .094$$

A little over 9% chance.

Our author does something interesting, <u>estimating</u>:

$$\text{Prob} \simeq \frac{7}{7+70} = \frac{7}{77} = \frac{1}{11}$$

$$\simeq \underline{9\%}$$

We just want to get <u>close</u>.

And 75% or 90% – those aren't close, &, sadly, lots of physicians aren't good at these conditional probabilities.