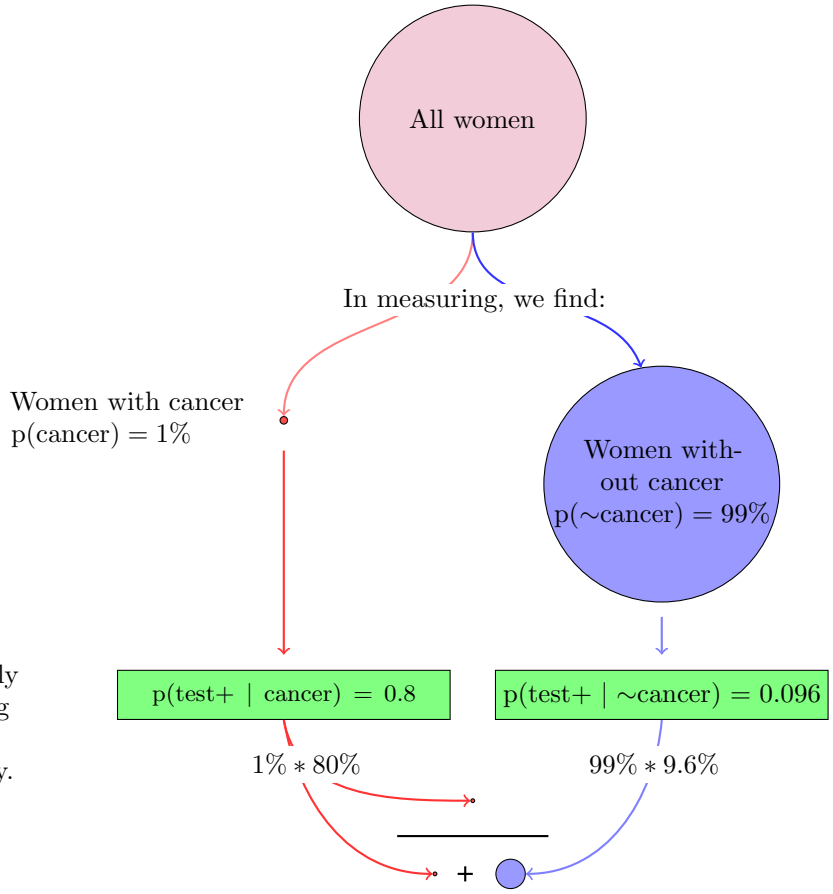

Now we pass both groups through the sieve; note that both sieves are *the same*; they just behave differently depending on which group is passing through.
Let test+ = a positve mammography.

Finally, to find the probability that a positive test *actually means cancer*, we look at those who passed through the sieve *with cancer*, and divide by all who received a positive test, cancer or not.

$$\frac{\text{p(test+ | cancer)}}{\text{p(test+ | cancer)} + \text{p(test+ | }\sim\text{cancer)}} = \frac{1\% * 80\%}{(1\% * 80\%) + (99\% * 9.6\%)} = 7.8\% = \text{p(cancer | test+)}$$