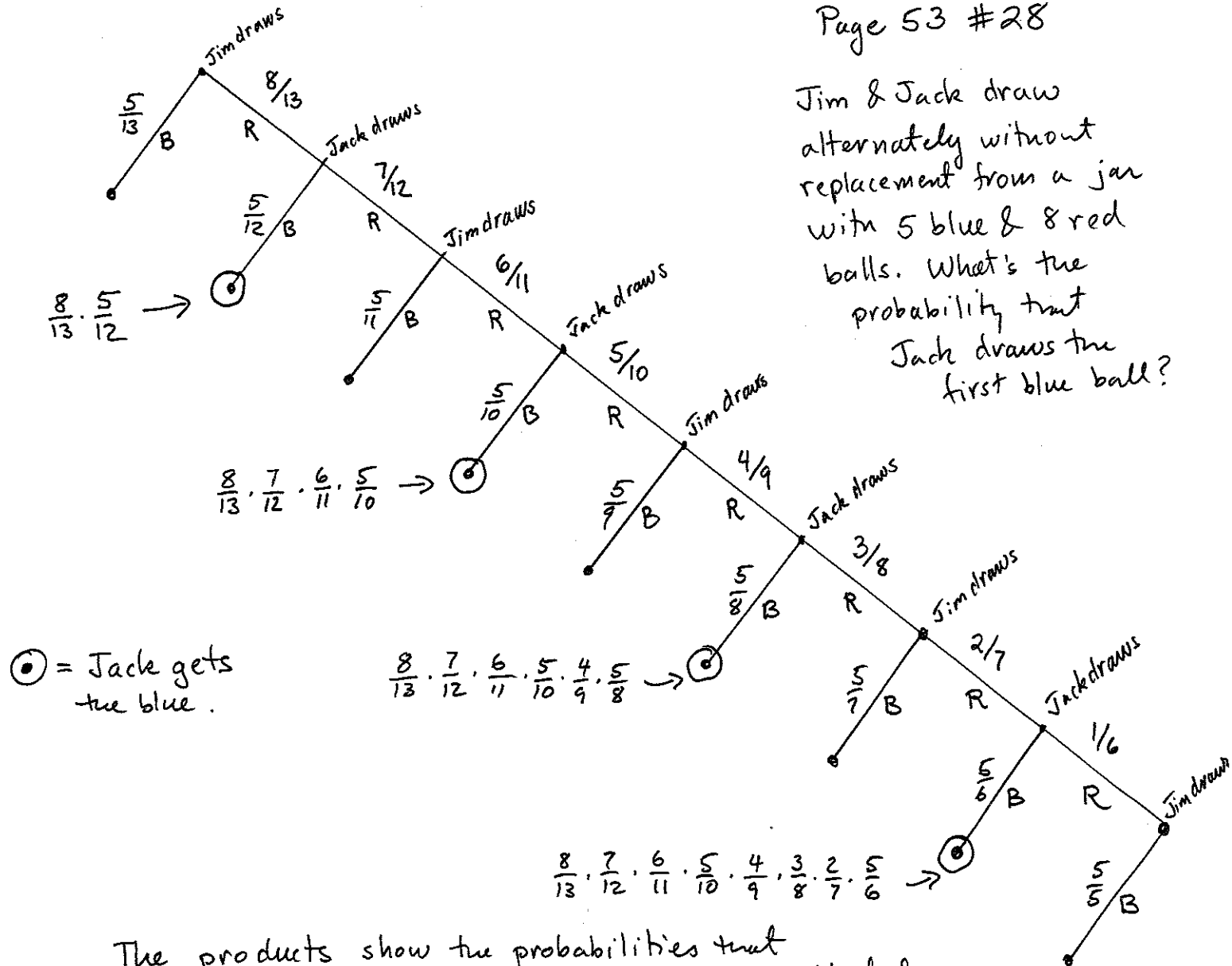


Jim & Jack draw alternately without replacement from a jar with 5 blue & 8 red balls. What's the probability that Jack draws the first blue ball?



The products show the probabilities that the process terminates at the point indicated with the $\rightarrow$.

The probability that Jack gets the blue is the sum of these products $= \frac{496}{1287} \approx 0.385392$

$$P(A \cap B) = 1 - P(A^c \cup B^c)$$

$$= 1 - P(A^c) - P(B^c) + P(A^c \cap B^c)$$

$$\geq 1 - (1-a) - (1-b)$$

$$= a+b-1$$

$$\therefore P(A|B) = P(A \cap B) / P(B) \geq (a+b-1)/b$$