Re: Probability of picking a positive rational number at random

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- *From*: Randy Poe <poespam−trap@xxxxxxxxx>
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On Mar 13, 4:10 pm, S_Pa...@xxxxxxxxxxx wrote:

> From my understanding, the probability of picking a positive rational
> number at random which is <1 is 50%, and also the probability that
> this number >1 is also 50%.
>
> Any thoughts are appreciated.
> Thanks

Depends on your distribution for picking "at random".

I'm guessing that you mean the numerator n and
denominator d are independent random variables
chosen from the same distribution. In that case,
regardless of the distribution, p(n < d) = p(d < n).
However, if there is a nonzero probability that
n = d, then neither p(n<d) nor p(d<n) is 50%.

One more general comment: There is no such thing
as a uniform distribution over all the natural
numbers. However, you might choose n and d as
uniformly distributed on some finite set, say
{1, 2, ..., 10000}.

> What is the probability that the number is <1/2. What about <2?
> How about <1/3 or < 3?

Depends on the details of the distribution.

− Randy
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