

1

Given: $bulbs = 10$ and $defective = n < 5$. Question: $n = ?$

(1) The probability that the two bulbs to be drawn will be defective is $1/15 \rightarrow$ clearly sufficient, as probability, P , of drawing 2 defective bulbs out of total 10 bulbs, obviously depends on # of defective bulbs, n , so we can calculate unique value of n if we are given P .

To show how it can be done: $\frac{n * n - 1}{10 * 9} = \frac{1}{15} \rightarrow n(n-1) = 6 \rightarrow n = 3$ or $n = -2$ (not a valid solution as n represents # of defective bulbs and can not be negative). Sufficient.

(2) The probability that one of the bulbs to be drawn will be defective and the other will not be defective is $7/15 \rightarrow$ also sufficient, but a little bit trickier: if it were 3 defective and 7 good bulbs OR 7 defective and 3 good bulbs, then the probability of drawing one defective and one good bulb would be the same for both cases (symmetric distribution), so info about the probability, $7/15$, of drawing one defective and one good bulb would give us 2 values of n one less than 5 and another more than 5 (their sum would be 10), but as we are given that $n < 5$, we can still get unique value of n which is less than 5.

To show how it can be done: $2 * \frac{n * (10 - n)}{10 * 9} = \frac{7}{15} \rightarrow n(10 - n) = 21 \rightarrow n = 3$ or $n = 7$ (not a valid solution as $n < 5$). Sufficient.

Answer: D.

2

First of all: $1/4x - 5 \leq 0$ should be written as $1/4 * x - 5 \leq 0$.

1. If x is to be selected at random from T , what is the probability that $\frac{1}{4} * x - 5 \leq 0$?

$\frac{1}{4} * x - 5 \leq 0 \rightarrow$ is $x \leq 20$?

(1) T is a set of 8 integers. Clearly insufficient.

(2) T is contained in the set of integers from 1 to 25, inclusive. Though the wording is a little bit strange but it means that set T is a subset of a set of integers from 1 to 25, inclusive. Set T can be $\{1, 5, 7\}$ or $\{21, 22, 25\}$... Also insufficient.

(1)+(2) T can be set of 8 integers, which are ALL less than or equal to 20 and in this case $P(x \leq 20) = 1$ or T can be set of 8 integers which are NOT ALL less than or equal to 20 and in this case $P(x \leq 20) < 1$. Not sufficient.

Answer: E.

You should spotted that there was something wrong with your approach as (1) say that T is a set of 8 integers and if (2) says that T is a set of integers from 1 to 25 inclusive, so set of 25 integers (as you suggested) then it would mean that statements contradict each other and on GMAT two statements never contradict.