Assignment 6

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

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| 1. How many times must we roll a die in order to be sure to get the same score? | 6 | 3 | Solution: 6
| 2. Let $P(x) = x^2 - 2$. Then base step is | 7 | $n = 1$ | Solution: 2
| 3. Let $A = \{3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14\}$ How many integers must be chosen from $A$, such that there exists two integers whose sum is 17? | 7 | 6 | Solution: 6
| 4. Let $A = \{1, 2, 3, \ldots\}$. What should be the minimum value of $k$ such that there are at least $2$ numbers having same remainder when divided by $k$? | 7 | 3 | Solution: 3
| 5. For which integer $n \geq 0$, $0.111\ldots \times 10^n$ is divisible by $9$ | 7 | $n = 3$ | Solution: 3
| 6. A box contains 6 blocks of white color and 8 blocks of black color all are matched. A man takes one at random in dark. How many minimum socks must he take out to be sure that he has at least 2 socks of the same color? | 7 | $2$ | Solution: 2
| 7. Let $P(x)$ be a statement, where $k$ is natural numbers. $P(k)$ is true and $P(k+1) \Rightarrow P(k+1)$, for some natural number $k$. Then $P(k)$ is true for all $k$. | 7 | True | Solution: True
| 8. Let $f : X \rightarrow Y$ be a function such that $X \subseteq Y$. Then by Pigeonhole Principle, we can conclude that | 7 | False | Solution: False
| 9. What is the least value of $k$ such that there must be at least $k$ numbers from $\{1, 2, 3, \ldots\}$, with a sum equal to $9$? | 7 | 6 | Solution: 6
| 10. Let $P(x) = x^2 - x$ is divisible by $x$, for all $x \in N$. $P(x)$ is false, because | 7 | True | Solution: True

Due on 2020-03-11, 23:59 IST.