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## REAL NUMBERS CLASS 10 ASSIGNMENT 1

1. Find the maximum number of boxes into which 1134 and 1215 oranges be distributed so that each box contains the same number of apples and oranges. **(Ans. 81)**
2. In a school, the duration of a period in junior section is 40 minutes and in the senior section is 60 minutes. If the first bell for each section rings at 9 a.m., when will the two bells ring together again? **(Ans. 11:00 a.m.)**
3. Show that every odd integer is of the form  $6q + 1$  or  $6q + 3$  or  $6q + 5$ , where  $q$  is some integer.
4. Show that one and only one out of  $n, n + 2, n + 4$  is divisible by 3, where  $n$  is any positive integer.
5. Explain why a number of the form  $4q + 2, q \in N$  can never be a perfect square.
6. Show that an odd positive integer is a perfect square only if it is in the form  $8m + 1$ , where  $m \in N$ .  
**OR**  
Show that the square of any odd positive integer is of the form  $8m + 1$ , where  $m \in N$ .
7. Show that for each  $n \in N, n^2 - n$  is an even number.
8. Show that only one out of every three consecutive positive integers is divisible by 3.
9. Show that a positive integer is a perfect square only if it is of the form  $3k$  or  $3k + 1$ , where  $k \in N$ .  
**OR**  
Show that the square of any positive integer is of the form  $3k$  or  $3k + 1$ , where  $k \in N$ .
10. Find the H.C.F. of 1794, 2346 and 4761 using Euclid's Division Lemma. **(Ans. 69)**