

In this PDF we will discuss questions based on the concept of L.C.M. and H.C.F. in which 'the difference between the divisor and the remainder is fixed.

Shortcut: $Required\ Number = \{LCM(\text{given divisors})\}k - \text{difference}.$

Where $Difference = Divisor - Remainder$
To find the smallest such number put $k = 1$.

Q1) Which is the smallest number which leaves remainder 8 and 12 when divided by 28 and 32 respectively?

Solution:

In this question, $difference = 20$ i.e. $28 - 8 = 20$, $32 - 12 = 20$.
So, the required number $= \{LCM(28, 32)\}k - 20 = 224k - 20$
As, we have to find the smallest number so, $k = 1$.
Required number $= 224 \times 1 - 20 = 204$

Q2) The smallest number which when divided by 20, 25, 35, 40 leaves a remainder of 14, 19, 29, 34 respectively is?

Solution:

In this question, $difference = 6$ i.e. $20 - 14 = 25 - 19 = 35 - 29 = 40 - 34 = 6$.
So, the required number $= \{LCM(20, 25, 35, 40)\}k - 6 = 1400k - 6$
As, we have to find the smallest number so, $k = 1$.
Required number $= 1400 \times 1 - 6 = 1394$

Q3) What is the smallest number, which, when divided by 12, 15, 18, and 27, leaves remainder of 8, 11, 14 and 23, respectively?

Solution:

In this question, $difference = 4$ i.e. $12 - 8 = 15 - 11 = 18 - 14 = 27 - 23 = 4$.
So, the required number $= \{LCM(12, 15, 18, 27)\}k - 4 = 540k - 4$
As, we have to find the smallest number so, $k = 1$.
Required number $= 540 \times 1 - 4 = 536$