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(Affiliated to CBSE up to +2 Level)

CLASS : X SUBJECT : MATHEMATICS DATE: 15.04.2021

1. Using Euclid's algortihm, find the HCF of (i) 405 and 2520

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405 ) 2520 ( 6
    - 2430
      90 ) 405 ( 4
        - 360
          45 ) 90 ( 2
            - 90
              0
```

ANSWER: On applying Euclid's algorithm

$a = bq + r$

Step I $2520 = 405 \times 6 + 90; r \neq 0$

Step II $405 = 90 \times\times 4 + 45; r \neq 0$

Step III $90 = 45 \times\times 2 + 0; r = 0$

Hence, the HCF of 2520 and 405 is 45.

(ii) 504 and 1188 (iii) 960 and 1575

(iv) 12576 and 4052 (iv) 867 and 255

Question - 2 – Show that any positive odd integer is of the form 6q+1 or, 6q+3 or, 6q+5 where q is some integer.

Solution: Let 'a' be any positive odd integer and 'b = 6'.

Therefore, a=6q+r where 0≤r<6

Now, by placing r=0,

a=6q+0=6q

By placing r=1,

we get, a=6q+1

By placing, r=2,

we get, a=6q+2

By placing, r=3,

we get, a=6q+3

By placing, r=4

we get, a=6q+4

By placing, r=5,

we get, a=6q+5

Thus, a=6q, or,6q+1 or 6q+2 or, 6q+3 or, 6q+4 or, 6q+5

But here, 6q, 6q+2, 6q+4 are the even integers

Therefore, 6q+1, or, 6q+3 or, 6q+5 are the forms of any positive odd integers.

Question 4: Use Euclid's division lemma to show that the square of any positive integer is either of the form 3m or 3m +1 for some integer m.

Question 5: Use Euclid's division lemma to show that the cube of any positive integer is of the form 9m, 9m + 1 or 9m + 8.