Use Euclids division algorithm to find the HCF of each of the following pairs of numbers

18, 24

```
18 |24 |1
   |18 |
      6|18|3
       |18|
          X
```

24=18X1+**6**

18=**6**X3

HCF of (18,24) =6

Use Euclids division algorithm to find the HCF of each of the following pairs of numbers

70 , 30

```
30 |70|2
   |60|
     10|30|3
       |30|
          X
```

70=30X2+10

30=10X3

HCF of (70, 30) = 10

Use Euclids division algorithm to find the HCF of each of the following pairs of numbers

714, 924

```
714|924|1
   |714|
      210|714|3
         |630|
            84|210|2
             |168|
               42|84|2
                |84|
                   X
```

HCF of (714, 924) = 42

Use Euclids division algorithm to find the HCF of each of the following pairs of numbers

155, 1385

```
155|1385|8
   |1240|
     145|155|1
        |145|
          10 |145|14
            |140|
              5|10|2
               |10|
                  X
```

HCF of 155, 1385 =5

Use Euclids division algorithm to find the HCF of each of the following numbers
296, 999, 925

              HCF of 296 and 999
              296|999|3
                |888|
                  111|296|2
                    |222|
                      74 |111|1
                        |74|
                          37|74|2
                            |74|
                              X
              HCF of 37 and 925
                37|925|25
                |925|
                  X
              HCF of 296, 999 and 925 = 37

Use Euclids division algorithm to find the HCF of each of the following numbers
480, 704, 3680

              HCF of 480 and 704
              480|704|1
                |480|
                  224|480|2
                    |448|
                      32 |224|14
                      |224|
                          X
              HCF of 32 and 3680
                    32 |3680|115
                    |3680|
                        X
              HCF of 480, 704 and 3680 = 32

Use Euclids division algorithm to find the HCF of each of the following numbers
1215, 513, 1134

              HCF of 1215 and 513
              513|1215|2
                |1026|
                  189|513|2
                    |378|
                    135 |189|1
                      |<u>135</u>|
                        54|135|2
                        |108|
                          27|54|2   HCF of 27 and 1134
                          |<u>54</u>| 27 |1134|42
                            X |1134|
                                         X
              HCF of 1215, 513 and 1134 = 27

Find the largest positive integer which divides 615 and 963 leaving remainder 6 in each case.

Solution

Remainder required = 6

Let us substract 6 from the given two numbers

615-6= 609

963-6= 957

Using Euclids Division Algorithm

$$608|967|1$$
$$|609|$$
$$348|608|2$$
$$|348|$$
$$261\ |348|1$$
$$|261|$$
$$87|261|3$$
$$|\underline{261}|$$
$$X$$

HCF = 87

: . The largest positive required number is 87.

Determine the greatest number which will divide 445, 572, 699 leaving remainder 4,5,6 respectively

Solution

The given number are 445, 572 and 699

The remainder are 4,5,6

445-4=441

572-5=567

699-6=693

HCF of 441 and 567

$$441|567|1$$
$$|441|$$
$$126|441|3$$
$$|378|$$
$$63\ |126|2$$
$$|\underline{126}|$$
$$X$$

HCF of 63 and 693

$$63|693|11$$
$$|\underline{693}|$$
$$X$$

HCF =63

:. The highest number required = 63

Using Euclid's division algorithm, state whether the number 47 and 149 are Coprimes or not.

Solution : If the HCF of two number is 1 , the numbers are called Coprime

        HCF of 47 and 149

        47|149|3
          |<u>141</u>|
             8|47|5
            |<u>40</u>|
              7|8|1
                |<u>7</u>|
              1|7|7
               |<u>7</u>|

HCF = 1   X

Since HCF = 1, 47 and 149 are Coprime

Using Euclid's division algorithm, state whether the number 272 and 1032 are Coprimes or not.

Solution : If the HCF of two number is 1 , the numbers are called Coprime

        HCF of 272 and 1032

        272|1032|3
          |<u>816</u>|
         216|272|1
           |<u>216</u>|
            56|216|3
             |<u>168</u>|
              48|56|1
               |<u>48</u>|
                8|48|6
               |<u>48</u>|

HCF = 8   X

Since HCF # 1, 272 and 1032 are not Coprime

Using Euclid's division algorithm, state whether the number 847 and 2160 are Coprimes or not.

Solution : If the HCF of two number is 1 , the numbers are called Coprime

        HCF of 847 and 2160

        847|2160|2
          |<u>1694</u>|
         466|847|1
           |<u>466</u>|
         381|466|1
            |<u>381</u>|
            85|381|4
             |<u>360</u>|
             21|85|4
              |<u>84</u>|
              1|21|21
               |<u>21</u>|

HCF = 1   X

Since HCF of 847 and 2160 = 1, Hence, they are coprime

The lengh and breadth of a field are 16 m 17 cm and 22m 77cm respectively. Obtain the maximum length of the rope which can measure the dimension of the field in exact number of times.

Solution   Length = 16m 17 cm = 1617cm   (given)
                      Breadth=22m77 cm = 2277cm
             The length of the longest rope is the HCF of 1617 and 2277
             1617|2277|1
                   |1617|
                   660|1617|2
                      |1320|
                      297|660|2
                         |594|
                         66|297|4
                           |264|
                            33|66|2
                              |66|
             HCF= 33   X
             :. The length of the longest rope =33 cm

Two Oil tankers contain 850 liters and 680 liters of petrol respectively. Find the maximum capacity of the container which can measure the petrol of either tank in exact number of times

Solution   The first tanker contain = 850 liters oil
                      Second Tanker contain = 680 liter oil
             The capacity of measuring the petrol oil of tankers is the HCF of 850 and 680

             680|850|1
                |680|
                170|680|4
                   |680|
                      X
             :. HCF= 170
             Hence the capacity to measure the petrol tank exactly= 170 liters.