Real Numbers Ex 1.2 Q1

Answer :

(i) We need to find H.C.F. of 32 and 54.

By applying division lemma

$54 = 32 \times 1 + 22$

Since remainder $\neq 0$, apply division lemma on 32 and remainder 22

$32 = 22 \times 1 + 10$

Since remainder $\neq 0$, apply division lemma on 22 and remainder 10

$22 = 10 \times 2 + 2$

Since remainder $\neq 0$, apply division lemma on 10 and remainder 2

$10 = 2 \times 5 + 0$

Therefore, H.C.F. of 32 and 54 is $\boxed{2}$

(ii) We need to find H.C.F. of 18 and 24.

By applying division lemma

$24 = 18 \times 1 + 6.$

Since remainder $\neq 0$, apply division lemma on divisor 18 and remainder 6

$18 = 6 \times 3 + 0.$

Therefore, H.C.F. of 18 and 24 is $\boxed{6}$

(iii) We need to find H.C.F. of 70 and 30.

By applying Euclid's Division lemma

$70 = 30 \times 2 + 10.$

Since remainder $\neq 0$, apply division lemma on divisor 30 and remainder 10

$30 = 10 \times 3 + 0.$

Therefore, H.C.F. of 70 and $30 = \boxed{10}$

(iv) We need to find H.C.F. of 56 and 88.

By applying Euclid's Division lemma

$88 = 56 \times 1 + 32.$

Since remainder $\neq 0$, apply division lemma on 56 and remainder 32

$56 = 32 \times 1 + 24.$

Since remainder $\neq 0$, apply division lemma on 32 and remainder 24

$32 = 24 \times 1 + 8.$

Since remainder $\neq 0$, apply division lemma on 24 and remainder 8

$24 = 8 \times 3 + 0.$

Therefore, H.C.F. of 56 and $88 = \boxed{8}$.

(v) We need to find H.C.F. of 475 and 495.

By applying Euclid's Division lemma

$495 = 475 \times 1 + 20.$

Since remainder $\neq 0$, apply division lemma on 475 and remainder 20

$475 = 20 \times 23 + 15.$

Since remainder $\neq 0$, apply division lemma on 20 and remainder 15

$20 = 15 \times 1 + 5.$

Since remainder $\neq 0$, apply division lemma on15 and remainder 5

$15 = 5 \times 3 + 0.$

Therefore, H.C.F. of 475 and $495 = \boxed{5}$.

(vi) We need to find H.C.F. of 75 and 243.

By applying Euclid's Division lemma

$243 = 75 \times 3 + 18.$

Since remainder $\neq 0$, apply division lemma on 75 and remainder 18

$75 = 18 \times 4 + 3.$

Since remainder $\neq 0$, apply division lemma on divisor 18 and remainder 3

$18 = 3 \times 6 + 0.$

Therefore, H.C.F. of 75 and $243 = \boxed{3}$.

(vii) We need to find H.C.F. of 240 and 6552.

By applying Euclid's Division lemma

$6552 = 240 \times 27 + 72.$

Since remainder $\neq 0$, apply division lemma on divisor 240 and remainder 72

$240 = 72 \times 3 + 24.$

Since remainder $\neq 0$, apply division lemma on divisor 72 and remainder 24

$72 = 24 \times 3 + 0.$

Therefore, H.C.F. of 240 and $6552 = \boxed{24}$.

(viii) We need to find H.C.F. of 155 and 1385.

By applying Euclid's Division lemma

$1385 = 155 \times 8 + 145.$

Since remainder $\neq 0$, apply division lemma on divisor 155 and remainder 145

$155 = 145 \times 1 + 10.$

Since remainder $\neq 0$, apply division lemma on divisor 145 and remainder 10

$145 = 10 \times 14 + 5.$

Since remainder $\neq 0$, apply division lemma on divisor 10 and remainder 5

$10 = 5 \times 2 + 0.$

Therefore, H.C.F. of 155 and $1385 = \boxed{5}$.

(ix) We need to find H.C.F. of 100 and 190.

By applying Euclid's division lemma

$190 = 100 \times 1 + 90.$

Since remainder $\neq 0$, apply division lemma on divisor 100 and remainder 90

$100 = 90 \times 1 + 10.$

Since remainder $\neq 0$, apply division lemma on divisor 90 and remainder 10

$90 = \times 10 \times 9 + 0.$

Therefore, H.C.F. of 100 and $190 = \boxed{10}$.

(x) We need to find H.C.F. of 105 and 120.

By applying Euclid's division lemma

$120 = 105 \times 1 + 15.$

Since remainder $\neq 0$, apply division lemma on divisor 105 and remainder 15

$105 = 15 \times 7 + 0.$

Therefore, H.C.F. of 105 and $120 = \boxed{15}$.

Answer :

(i) Given integers are 225 and 135. Clearly 225 > 135. So we will apply Euclid's division lemma to 225 and 135, we get,

$867 = (225)(3) + 192$

Since the remainder $90 \neq 0$. So we apply the division lemma to the divisor 135 and remainder 90. We get,

$135 = (90)(1) + 45$

Now we apply the division lemma to the new divisor 90 and remainder 45. We get,

$90 = (45)(2) + 0$

The remainder at this stage is 0. So the divisor at this stage is the H.C.F.

So the H.C.F of 225 and 135 is $\boxed{45}$.

(ii) Given integers are 38220 and 196. Clearly 38220 > 196. So we will apply Euclid's division lemma to 38220 and 196, we get, $38220 = (196)(195) + 0$

The remainder at this stage is 0. So the divisor at this stage is the H.C.F.

So the H.C.F of 38220 and 196 is $\boxed{196}$.

(iii) Given integers are 867 and 255. Clearly 867 > 225. So we will apply Euclid's division lemma to 867 and 225, we get, $867 = (225)(3) + 192$

Since the remainder $192 \neq 0$. So we apply the division lemma to the divisor 225 and remainder 192. We get,

$225 = (192)(1) + 33$

Now we apply the division lemma to the new divisor 192 and remainder 33. We get,

$192 = (33)(5) + 27$

Now we apply the division lemma to the new divisor 33 and remainder 27. We get, $33 = (27)(1) + 6$

Now we apply the division lemma to the new divisor 27 and remainder 6. We get, $27 = (6)(4) + 3$

Now we apply the division lemma to the new divisor 6 and remainder 3. We get, $6 = (3)(2) + 0$

The remainder at this stage is 0. So the divisor at this stage is the H.C.F.

So the H.C.F of 867 and 255 is $\boxed{3}$.

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