14 May '25

→ HW: Last class HWs — Solve again step by step! Verify your answers with AI answers afterwards.

→ GCD/GCF (Greatest common divisor/factor)

Eg: a = 32 ; b = 72

Factors of a : 1, 2, 4, 8, 16, 32

Factors of b : 1, 2, 4, 6, 8, 9, 12, 18, 36, 72

GCD(a,b) = 8

To find factors of a number (n):

Since factors come in pairs,
(Eg: $2 \times 36 = 72$, so both 2, 36 are factors of 72)

we only need to check from 1 to $\sqrt{n}$ to find all factors of n.

$\sqrt{n}$ = square root of n = p

$\Rightarrow p^2 = n$.

In the previous examples:

$\sqrt{32} = 5.\_\_\_$;

So, we need to check from 1 to 5 to find all factors of 32

$5^2 = 25$ $\quad 25 < 32$

$6^2 = 36$ $\quad 36 > 32$

So, $\sqrt{32}$ is b/w 5 & 6

$\sqrt{72} = 8.\ldots$

So we have to check from 1 to 72 to find all factors of 72.

$8^2 = 64 < 72$

$9^2 = 81 > 72$

$\Rightarrow 64 < 72 < 81$

$\Rightarrow \sqrt{64} < \sqrt{72} < \sqrt{81}$

$\Rightarrow 8 < \sqrt{72} < 9$

Eg: Find factors of 100.

$\sqrt{100} = 10$, since $10^2 = 100$

If $a \times b = 100$ and $a, b \neq 10$,

then if $a < 10 \Rightarrow b > 10$

< 10 { 1×100, 2×50, 4×25, 5×20 } > 10

10×10

factors are $\underbrace{1, 2, 4, 5}_{<10}, 10, \underbrace{20, 25, 50, 100}_{>10}$

→ See AI document on how to find all the factors of a number (by checking upto it's sqrt)

HW: Find all the factors of

(1) 76 (2) 128 (3) 82 (4) 96

(5) 63 (6) 42 (7) 88 (8) 120

HW: Find GCD of

(1) 76 and 88 (4) 88 and 96

(2) 120 and 128 (5) 128 and 96

(3) 63 and 42 (6) 42 and 128