Answer on Question #43644 – Math – Algebra

Find the HCF of 144,180,192.

Solution.

Find the greatest common divisor:
gcd(144, 180, 192)

Find the divisors of each integer and select the largest element they have in common:
The divisors of 144 are:
1, 2, 3, 4, 6, 8, 9, 12, 16, 18, 24, 36, 48, 72, 144

The divisors of 180 are:
1, 2, 3, 4, 5, 6, 9, 10, 12, 15, 18, 20, 30, 36, 45, 60, 90, 180

The divisors of 192 are:
1, 2, 3, 4, 6, 8, 12, 16, 24, 32, 48, 64, 96, 192

The largest number common to all divisor lists is 12:
divisors of 144: 1, 2, 3, 4, 6, 8, 9, **12**, 16, 18, 24, 36, 48, 72, 144
divisors of 180: 1, 2, 3, 4, 5, 6, 9, 10, **12**, 15, 18, 20, 30, 36, 45, 60, 90, 180
divisors of 192: 1, 2, 3, 4, 6, 8, **12**, 16, 24, 32, 48, 64, 96, 192

Answer:

$$\gcd(144, 180, 192) = 12$$