Greatest Common Factor Encyclopedia Article

Greatest Common Factor

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Greatest Common Factor

The greatest common **factor** (or *greatest common divisor*) of a set of natural numbers is the largest natural number that divides each member of the set evenly (with no remainder). For example, 6 is the greatest common factor of the set {12, 18, 30} because 12 ÷ 6 = 2, 18 ÷ 6 = 3, and 30 ÷ 6 = 5.

Similarly, the greatest common factor of a set of **polynomials** is the polynomial of highest degree that divides each member of th set with no remainder. For example, $3(x+2)^3(x-4)^2$, $12(x+2)^4(x-4)^3(x2+x+5)$, and $6(x+2)^2(x-4)$ have $3(x+2)^2(x-4)$ for the highest common factor.