Greatest Common Factor

Summary

1. For numbers, find the greatest common factor (a.k.a. greatest common divisor).
2. For variables, pick the lowest power of each variable expression.

Typically, when the first term is negative, include that negative when factoring out the GCF.

Example 1. Factor the greatest common factor (GCF) from each.

(a) $21x^2 + 28x$

(b) $20x^2 + 30x$

(c) $-3x^3 + 12x^2$

(d) $-2x^3 + 10x^2$

When factoring trinomials, sometimes you can still factor what remains after factoring out the GCF.

Example 2. Factor each *completely*.

(a) $3x^2 + 6x + 48$

(b) $2x^2 - 20x - 120$

(c) $5x^2 - 45x + 90$

(d) $4x^2 + 12x - 40$