

Greatest Common Factor

Greatest Common Factor of Integers (Review)

8
F is 4ab

To Factor Polynomials:
Find the Greatest Common Factor

$-16x^2 + 4x$
:
:
:

"Bring Out" the common factor from each term

→ Divide GCF from each term

CF in 4x
 $\frac{16x^2 + 4x}{4x \quad 4x}$
 $4x + 1$

Put the remaining terms in parentheses

GCF (remaining)

Remaining
↓
 $x^2 - 4x + 1$

$x^2 - 4x + 1$
 $-16x^2 + 4x$

3. $\frac{15x^2}{3} - \frac{6x}{3} + \frac{9}{3}$ GCF = 3
 $3(5x^2 - 2x + 3)$

4. $\frac{5x^4y^2}{5xy} - \frac{10xy}{5xy}$
 $5xy(x^3y - 2)$

Greatest Common Factor

① Find GCF of 32 + 56

32: 1, 2, 4, 8, 16, 32 8

56: 1, 2, 4, 7, 8, 14, 28, 56

② $4a^2b$: 1, 2, 4, a, a, b

$8ab$: 1, 2, 4, 8, a, b

GCF is $4ab$

Factor:

1. $6x^2 - 36x$

$6x^2$: (6), (x), (x)

$36x$: (6), (x)

GCF is $6x$

$\frac{6x^2}{6x} - \frac{36x}{6x}$

$x - 6$

$x - 6$

GCF (Remaining)

$6x(x - 6)$

check by mult.
 $6x(x - 6)$
 $6x^2 - 36x$ ✓

2. $4x^3 - 16x^2 + 4x$

$4x^3$: (4), (x), (x), (x)

$16x^2$: (4), (x), (x)

$4x$: (4), (x)

GCF is $4x$

$\frac{4x^3}{4x} - \frac{16x^2}{4x} + \frac{4x}{4x}$

$x^2 - 4x + 1$

$x^2 - 4x + 1$

GCF Remaining

$4x(x^2 - 4x + 1)$

check by mult.
 $4x(x^2 - 4x + 1)$
 $4x^3 - 16x^2 + 4x$

3. $\frac{15x^2}{3} - \frac{6x}{3} + \frac{9}{3}$ GCF = 3

$3(5x^2 - 2x + 3)$

4. $\frac{5x^4y^2}{5xy} - \frac{10xy}{5xy}$

$5xy(x^3y - 2)$