

Factoring by GCF



Method 1: List

Greatest Common Factor (GCF)

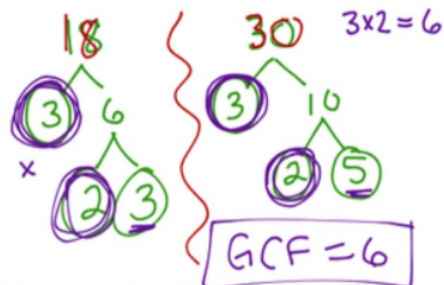
20: 1, 2, 4, 5, 10, 20

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

Method 2: Tree

The GCF of two numbers is the largest factor common to both.

Find the GCF of 18 and 30 using factor trees.



New Method!!

Upside down division / ladder / cake

Find the GCF of 12 and 30

$$\begin{array}{r|rr} 6 & 12 & 30 \\ \hline & 2 & 5 \end{array}$$

GCF = 6



Find the GCF of 24 and 60.

$$\begin{array}{r|rr} 6 & 24 & 60 \\ \hline 2 & 4 & 10 \\ \hline & 2 & 5 \end{array}$$

GCF = 12



Find the GCF of 14 and 58

$$\begin{array}{r} 2 \overline{) 14 \quad 58} \\ \underline{ 7 \quad 29} \end{array}$$

$$\text{GCF} = 2$$



Find the GCF of $3x^3$ and $6x^2$

3	$3x^3$	$6x^2$
x	x^3	$2x^2$
x	x^2	$2x$
	x	2

GCF = $3x^2$



Find the GCF of $18b^2$ and $27b^3$

$$\text{GCF} = 9b^2$$

9	$18b^2$	$27b^3$
b	$2b^2$	$3b^3$
b	$2b$	$3b^2$
	2	$3b$

Find GCF of $4x^2$ and $5y^3$

Relatively
Prime

$$4x^2 \quad 5y^3$$



Find the GCF of $4x^2 - 3x$

Find the GCF of $5x + 20y$

$$\text{GCF} = 5$$

$$\boxed{5(x+4y)}$$

$$\begin{array}{r} 5 \overline{) 5x + 20y} \\ \underline{5x + 20y} \\ 0 \end{array}$$



Find the GCF of $10y^3 + 20y^2 - 5y$

$$\begin{array}{l} \text{GCF} = 5y \quad 5 \overline{) 10y^3 + 20y^2 - 5y} \\ \quad \quad \quad y \overline{) 2y^3 + 4y^2 - y} \\ \quad \quad \quad \boxed{5y(2y^2 + 4y - 1)} \quad \quad 2y^2 + 4y - 1 \end{array}$$

How could you check your answer?
Distribute to the parenthesis.



Factor by finding the GCF

$$\underline{12}a^3 - \underline{9}a^2 + \underline{20}a - \underline{15}$$

Relatively
Prime

