

Least Common Denominator

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Some of my previous students called this method the "Layer Cake Method."

Let's find common denominator for $\frac{1}{30}$ and $\frac{7}{135}$ and $\frac{5}{72}$

Factor out any common factors →

3	30	135	72
2	10	45	24

at this point, you keep factoring out anything that's in common w/ two of the numbers.

5	5	45	12
3	1	9	12
3	1	3	4
4	1	1	4
	1	1	1

When you get to a row of ones, you're done. All the factors on left make up LCD.

$$\Rightarrow \text{LCD} = 3 \cdot 2 \cdot 5 \cdot 3 \cdot 3 \cdot 4$$

LCD

Let's do another example.

Ex 1 Find LCD for $25x^2$, $35xy$, $14x^3y^2$

x	$25x^2$	$35xy$	$14x^3y^2$
5	$5x$	$7y$	$14x^2y^2$
5	x	$7y$	$14x^2y^2$
7	x	y	$2x^2y^2$
x	1	y	$2xy^2$
y	1	1	$2xy$
2xy	1	1	1

$$\Rightarrow \text{LCD} = x(5)(5)(7)(x)(y)(2xy) = 2(5^2)(7)x^3y^2$$