Nafn: LAUSN

1. Frumþáttaðu tölurna 50778

	50778	25389	8463	2821	403	31
Þættir	2	3	3	7	13	31

$$2 \cdot 3^2 \cdot 7 \cdot 13 \cdot 31$$

2. Finndu minnsta samfeldi (samnefnara) talnanna:　　46, 135 og 156

$$46 = 2 \cdot 23$$

$$135 = 3^3 \cdot 5$$

$$156 = 2^2 \cdot 3 \cdot 13$$

Minnsta samfeldi er:

$$2^2 \cdot 3^3 \cdot 5 \cdot 13 \cdot 23 = \mathbf{161360}$$

Þáttaðu:

3.　$3x - 21b$

$$3x - 21b =$$
$$\mathbf{3(x - 7b)}$$

4.　$3yx^2 - 12xy + 9zx$

$$3yx^2 - 12xy + 9zx =$$
$$\mathbf{3x(xy - 4y + 3z)}$$

5.　$4x^2 - 81$

$$2^2 x^2 - 9^2 =$$
$$\mathbf{(2x + 9)(2x - 9)}$$

6.　$2ax + 10a - x - 5$

$$(2ax + 10a)(-x - 5) =$$

$$2a(x + 5) - 1(x + 5) =$$

$$\mathbf{(x + 5)(2a - 1)}$$

Fullstyttu brotin:

7. $\dfrac{3x^2+6x-45}{x^2-7x+12}$

$$\dfrac{3(x^2+2x-15)}{x^2-7x+12} =$$

$$\dfrac{3(x+5)(x-3)}{(x-4)(x-3)} =$$

$$\boldsymbol{\dfrac{3x+15}{x-4}}$$

8. $\dfrac{x^3-18x^2+81x}{9x^2-x^3}$

$$\dfrac{x(x^2-18x+81)}{x^2(9-x)} =$$

$$\dfrac{x(x-9)(x-9)}{x^2 \cdot (-1)(-9+x)} =$$

$$\dfrac{x(x-9)(x-9)}{x^2 \cdot (-1)(-9+x)} =$$

$$-\boldsymbol{\dfrac{x-9}{x}}$$

Algebrubrot – samlagning og frádráttur

9. $\dfrac{x+1}{x-1} - \dfrac{x^2-4}{x^2-4x+3}$

$$\dfrac{x+1}{x-1} - \dfrac{x^2-4}{(x-1)(x-3)}$$

$$\dfrac{(x+1)\cdot(x-3)}{(x-1)\cdot(x-3)} - \dfrac{x^2-4}{(x-1)(x-3)}$$

$$\dfrac{x^2-3x+1x-3-x^2+4}{(x-1)(x-3)} =$$

$$\boldsymbol{\dfrac{-2x+1}{x^2-4x+3}} =$$

10. $\dfrac{1}{1-x} - \dfrac{2}{x^2-1} + \dfrac{2}{1+x}$

$$\dfrac{1\cdot(x+1)(x-1)}{(1-x)(x+1)(x-1)} - \dfrac{2\cdot(1-x)}{(x+1)(x-1)(1-x)} + \dfrac{2\cdot(1-x)(x-1)}{(x+1)(1-x)(x-1)}$$

$$\dfrac{x^2-1}{(1-x)(x+1)(x-1)} - \dfrac{2-2x}{(x+1)(x-1)(1-x)} + \dfrac{-2x^2+4x-2}{(x+1)(1-x)(x-1)}$$

$$\dfrac{x^2-1-2+2x-2x^2+4x-2}{(1-x)(x+1)(x-1)}$$

$$\dfrac{-x^2+6x-5}{(1-x)(x+1)(x-1)}$$

$$\dfrac{-(x-5)(x-1)}{(1-x)(x+1)(x-1)}$$

$$\dfrac{-(x-5)}{-(x-1)(x+1)}$$

$$\dfrac{x-5}{x^2-1}$$