

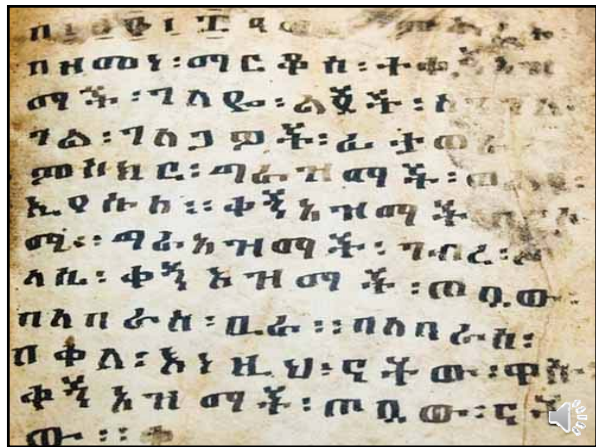


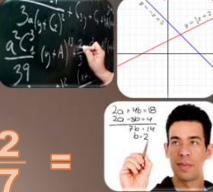
Algebra 1

Mathematical Operations with Rational Expressions

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$$\frac{a}{b} + \frac{c}{d} \quad \frac{a}{b} - \frac{c}{d}$$




$$\frac{1}{2} + \frac{2}{7} = \frac{7 \cdot 1}{7 \cdot 2} + \frac{2 \cdot 2}{2 \cdot 7} =$$

$$\frac{7}{14} + \frac{4}{14} = \frac{11}{14}$$

Addition and Subtraction with Rational Expressions

$$\frac{a}{b} + \frac{c}{d} =$$

$$\frac{d \cdot a}{d \cdot b} + \frac{b \cdot c}{b \cdot d} =$$



$$\frac{ad}{bd} + \frac{bc}{bd} = \frac{ad + bc}{bd}$$



Addition and Subtraction with Rational Expressions

$$\frac{1}{4} + \frac{1}{6} =$$

$$\frac{1}{2 \cdot 2} + \frac{1}{2 \cdot 3} =$$

$$\frac{1 \cdot 3}{2 \cdot 2 \cdot 3} + \frac{1 \cdot 2}{2 \cdot 2 \cdot 3} =$$



$$\frac{3}{12} + \frac{2}{12} = \frac{5}{12}$$



Addition and Subtraction with Rational Expressions

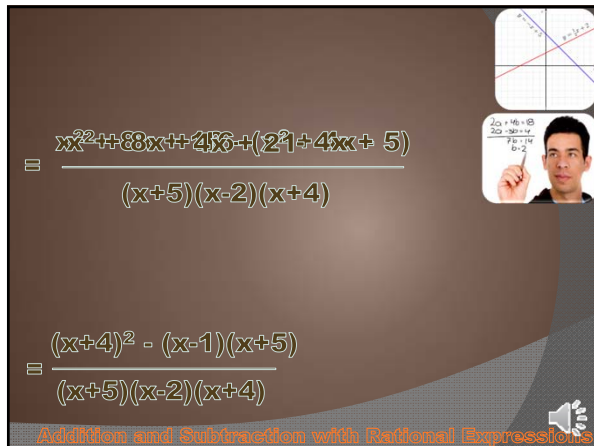
$$\frac{x + 4}{x^2 + 3x - 10} - \frac{x - 1}{x^2 + 2x - 8}$$

$$= \frac{x + 4}{(x+5)(x-2)} - \frac{x - 1}{(x+4)(x-2)}$$

$$= \frac{(x+4)(x+4)}{(x+5)(x-2)(x+4)} - \frac{(x-1)(x+5)}{(x+4)(x-2)(x+5)}$$

$$= \frac{(x+4)^2 - (x-1)(x+5)}{(x+5)(x-2)(x+4)}$$



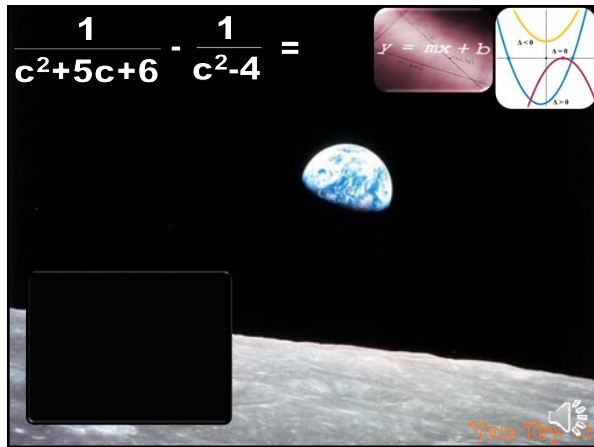
Addition and Subtraction with Rational Expressions



$$\frac{x^2 + 8x + 15 + (2^2 + 4x + 5)}{(x+5)(x-2)(x+4)}$$

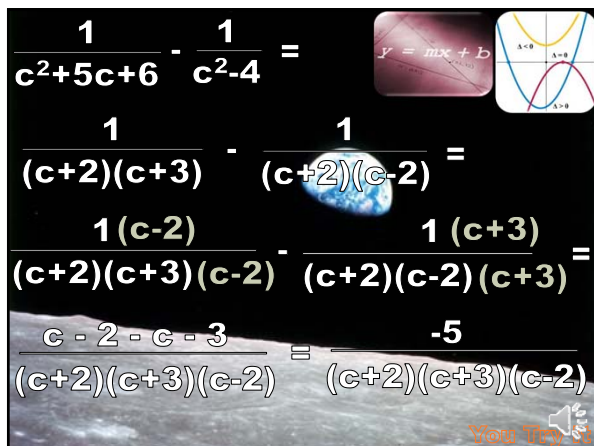
$$\frac{(x+4)^2 - (x-1)(x+5)}{(x+5)(x-2)(x+4)}$$

Addition and Subtraction with Rational Expressions



$$\frac{1}{c^2 + 5c + 6} - \frac{1}{c^2 - 4} =$$

You Try It!



$$\frac{1}{c^2 + 5c + 6} - \frac{1}{c^2 - 4} =$$

$$\frac{1}{(c+2)(c+3)} - \frac{1}{(c+2)(c-2)} =$$

$$\frac{1(c-2)}{(c+2)(c+3)(c-2)} - \frac{1(c+3)}{(c+2)(c-2)(c+3)} =$$

$$\frac{c-2-c-3}{(c+2)(c+3)(c-2)} = \frac{-5}{(c+2)(c+3)(c-2)}$$

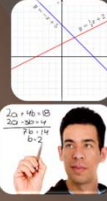
You Try It!

$$\frac{3}{4} * \frac{2}{3} = \frac{3*2}{4*3} = \frac{6}{12} = \frac{1}{2}$$

$$\frac{a}{b} * \frac{c}{d} = \frac{ac}{bd}$$

$$\frac{3}{4} \div \frac{3}{1} = \frac{3*3}{4*1} = \frac{9}{4} = 2\frac{1}{4}$$

$$\frac{a}{b} \div \frac{c}{d} = \frac{a}{b} * \frac{d}{c} = \frac{ad}{bc}$$



Multiplication and Division with Rational Expressions

$$\frac{2x^2 + 5x}{x^2 - 81} \div \frac{x^2}{x + 9} =$$




You Try it

$$\frac{2x^2 + 5x}{x^2 - 81} \div \frac{x^2}{x + 9} =$$

$$\frac{2x^2 + 5x}{x^2 - 81} * \frac{x + 9}{x^2} =$$

$$\frac{\cancel{x}(2x+5)}{(\cancel{x+9})(x-9)} * \frac{\cancel{x+9}}{x^2} =$$

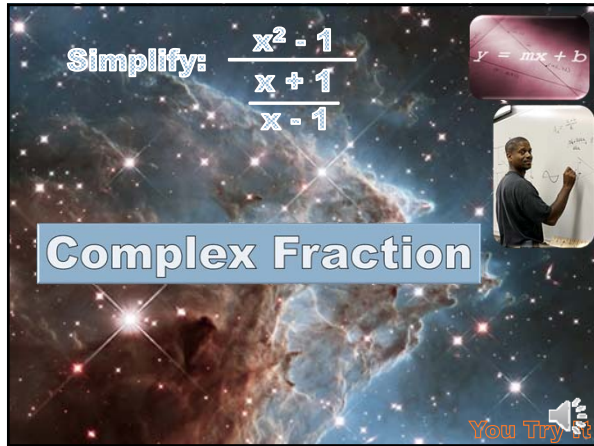
$$\frac{2x + 5}{x^2 - 9x}$$



You Try it

Simplify: $\frac{x^2 - 1}{\frac{x + 1}{x - 1}}$

Complex Fraction



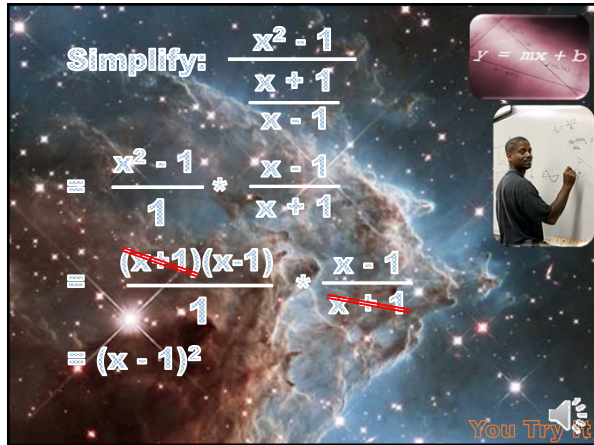
The image shows a complex fraction problem: $\frac{x^2 - 1}{\frac{x + 1}{x - 1}}$. It includes a small inset of a teacher at a whiteboard, a 'You Try it' logo, and a 'y = mx + b' formula graphic. The background is a colorful nebula.

Simplify: $\frac{x^2 - 1}{\frac{x + 1}{x - 1}}$

$= \frac{x^2 - 1}{1} * \frac{x - 1}{x + 1}$

$= \frac{\cancel{(x+1)}(x-1)}{1} * \frac{x-1}{\cancel{x+1}}$

$= (x - 1)^2$



The image shows the same complex fraction problem as above, but with the steps of simplification. It includes a small inset of a teacher at a whiteboard, a 'You Try it' logo, and a 'y = mx + b' formula graphic. The background is a colorful nebula.

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The image is a promotional banner for MasterMath.info. It features a teacher at a whiteboard, a 'You Try it' logo, and a 'y = mx + b' formula graphic. The background is a colorful nebula.
