A rational expression takes the form of a quotient of two polynomials.

eg. $\frac{1}{x-2}$, $\frac{2x}{x^2+1}$

A rational expression cannot contain roots of variables or variables as exponents.

eg. $\frac{\sqrt{x}}{x-8}$ $\frac{4^x}{x^2-7}$

A rational expression has restrictions on the denominator when a variable is in the denominator that makes the denominator equal to "0".
They are also known as non-permissible values

look at denom.
- undefined
- restrictions
- non-permissible

ex. 1 $\frac{1}{x-2}$

$x-2 \neq 0$

$x \neq 2$

2. $\frac{2x}{}$

2. $\frac{2x}{x^2+1}$ → $x^2+1 \neq 0$

$x^2 \neq -1$

$x \neq \sqrt{-1}$ not possible

MEANING

NO RESTRICTIONS

3. $\frac{3x+2}{x^2-8x+7}$ → $x^2-8x+7 \neq 0$

FACTOR

$\oplus$ -8

$\otimes$ 7

$-7, -1$

$(x-7)(x-1) \neq 0$

$x-7 \neq 0$ → $x \neq 7$

$x-1 \neq 0$ → $x \neq 1$

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