

RATIONAL FUNCTIONS REVIEW

1-3) * + ÷ (2 problems)

1) Pull out common factors!

4 terms = Grouping

2 terms = squares or cubes

3 terms = UNFOIL

$$\frac{x^2 + x - 12}{x^3 + 64}$$

$\begin{matrix} 1 & 12 \\ 2 & 6 \\ 3 & 4 \end{matrix}$
 4^3

$$\frac{-3x^2 + 12x - 48}{(x^3 - 3x^2 - 4x + 12)}$$

$x^2(x-3) - 4(x-3)$

$$\frac{(x-3)(x+4)}{(x+4)(x^2-4x+16)} \cdot \frac{-3(x^2-4x+16)}{(x-3)(x^2-4)} = \frac{-3}{(x+2)(x-2)}$$

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

- 4-6) +/-
- 1) Factor denoms
 - 2) Make + Keep Common denom.
 - 3) Add like terms to make 1 fraction

$$\frac{x+2}{x^2-3x-28} + \frac{2x}{7x-x^2}$$

$$\frac{x+2}{(x+4)(x-7)} + \frac{-2x(x+4)}{+x(x-7)(x+4)}$$

$$= \frac{x+2-2x-8}{(x+4)(x-7)}$$

$$= \frac{-x-6}{(x+4)(x-7)}$$

No
= Sign
* Keep the
Common
denom

7-8) Complex Fractions (1 problem)

- 1) Add numerators
- 2) Add denominators
- 3) Keep-Change-flip
- 4) Factor + Cancel

$$\frac{\frac{x}{x+4} + \frac{3}{x-1}}{\frac{2x}{x+4} - \frac{6}{x-2}} = \frac{\quad}{\quad}$$

9-12) Solve (have = signs)

Check for
excluded
values.

* Factor the denominators

* Multiply by common denom & cancel all denominators

$$x^2 - 2x - \frac{3}{x} = 0$$

changed to
-3

$$x^2 - 2x - 3 = 0$$

$$(x-3)(x+1) = 0$$

$$\frac{x+1}{x-3} \left[\frac{2}{x+1} + \frac{x-5}{x-3} = 7 \right]$$

$$2(x-3) + (x+1)(x-5) = 7(x+1)(x-3)$$

1 Word Problem

3 graphs

