Rational Functions Review

1-8) Simplify = Result: an expression with variables

     * Make + keep common denominators

* or ÷	+ or −
factor all quantities + cancel	1) Factor denoms 2) Make common denom 3) + or −

1 mult.
1 div.
1 or 2 +/−
1 complex fraction

9-12) Solve - have $=$ Sign   (2 problems)

　1) Factor the denoms

　2) Multiply by common denom + cancel all
　　　　　　　　　　　　　　　　denoms

1 Word Problem

3 graphs

Solve.

$$x^2 - 3x - \cancel{5}\,{}^{4} = 0$$

$$(x-4)(x+1) = 0$$

$$\frac{x^3-64}{32-2x^2} \div \frac{x^3+4x^2+2x+8}{2x^2+8x+32}$$

$$\frac{x^3-\overset{4^3}{64}}{-2(x^2-16)} \cdot \frac{2x^2+8x+32}{(x^3+4x^2+2x+8)}$$

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

$$\begin{array}{cc} 1 & 16 \\ 2 & 8 \\ 4 & 4 \end{array}$$

$$(x+4)(x^2+2)$$

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

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

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

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

$$\frac{-x^2-6x}{x(x-7)(x+4)}$$

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

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