Main Ideas/Questions	Notes/Examples
Rational Expression	A **rational expression** is a _____ of two polynomial expressions.
	To **simplify** a rational expression:
	① Factor everything that can be factored.
	② Simplify the monomials (use the exponent rules!)
	③ Eliminate common binomial factors.
Examples	**1.** $\dfrac{20x^6}{14x^2}$ **2.** $\dfrac{6k-36}{k-6}$
	3. $\dfrac{y+8}{y^2+2y-48}$ **4.** $\dfrac{2r^2-2r-40}{8r+32}$
Watch out! $\dfrac{a-b}{b-a} =$ →	**5.** $\dfrac{p^2-49}{7-p}$ **6.** $\dfrac{12a^3-3a}{12a^3+6a^2}$
	7. $\dfrac{6n^2+8n+2}{2n^2-2}$ **8.** $\dfrac{45-5w}{3w^2-28w+9}$

Multiplying Rational Expressions	If the problem contains- • **Monomials only:** Multiply together, then simplify. • **Binomials/Trinomials:** Factor everything you can FIRST, then simplify.

9. $\dfrac{6x^2 y^3}{2x^2 y^2} \cdot \dfrac{10x^3 y^4}{18y^2}$	**10.** $\dfrac{4a^2 b^2}{15ab^3} \cdot \dfrac{5a^3 b^6}{12a^4 b^7}$
11. $\dfrac{4x^2 - 4x}{2x^2 + 4x - 6} \cdot \dfrac{x^2 + x - 6}{4x^2 + 8x}$	**12.** $\dfrac{10v - 5v^2}{v^2 - 11v + 18} \cdot \dfrac{v^2 - 8v - 9}{15v}$

Dividing Rational Expressions	To divide rational expressions, multiply by the _____ !

13. $\dfrac{5pq}{16p^3} \div \dfrac{35p^2 q^2}{8q^5}$	**14.** $\dfrac{10}{4x - 8} \div \dfrac{2x^2 + 6x}{x^2 + x - 6}$
15. $\dfrac{2a^3 - 12a^2}{a^2 - 4a - 12} \div \dfrac{24a^2 - 8a^3}{a^2 - 8a + 15}$	**16.** $\dfrac{k+3}{k} \div (4k+1) \cdot \dfrac{16k^2 - 1}{k + 3}$