

# Rational Equations

- two polynomials being divided with a fraction bar
- simplify: write in the most reduced form.

$$\boxed{\text{ex}} \quad \frac{p^2 - 5p}{p^2 - 2p - 15} = \frac{\cancel{p}(\cancel{p-5})}{(\cancel{p-5})(p+3)} = \frac{p}{p+3}$$

factor                      cancel

→ you can only cancel pieces multiplying so (p-5) cancels but not the p's in

- multiplying radical equations: 1<sup>st</sup> factor & cancel  $\frac{p}{p+3}$   
what you can then multiply

## examples

$$1. \frac{x+3}{4} \cdot \frac{3(x-6)}{3(x+3)}$$

$$2. \frac{2}{v^2-12v+27} \cdot \frac{(v-9)(v+3)}{3}$$

$$3. \frac{-x^2-7x+8}{x+8} \cdot \frac{x+5}{9x-9}$$

- dividing radical equations: 1<sup>st</sup> factor, flip the 2<sup>nd</sup> fraction & multiply

## examples

$$1. \frac{2b^2-12b}{b+5} \div \frac{b-6}{b+5}$$

$$2. \frac{(v-7)(v+8)}{v^2-2v-80} \div \frac{1}{v-10}$$