

Quiz Notes

simplifying radical expressions

- factor as much as you can & cancel factors

ex $\frac{4x^2 + 8x}{x^2 + 4x + 4} = \frac{4x(\cancel{x+2})}{(\cancel{x+2})(x+2)} = \frac{4x}{x+2}$

* cannot cancel
the x's at this
~~step~~ *
step

solving fractions

- if you have fraction = fraction with the same common denominator, you can just look at the numerators

multiplying & dividing rational expressions

1. factor as much as possible
2. cancel from top & bottom and diagonals
3. multiply across for the rest

ex1 $\frac{(x-5)(x+2)}{10x^2+20x} \cdot \frac{3x^2-4x}{x^2(x-2)}$
 $= \frac{(x-5)(\cancel{x+2})}{10\cancel{x(x+2)}} \cdot \frac{\cancel{x}(3x-4)}{x^2(x-2)} = \boxed{\frac{(x-5)(3x-4)}{10x^2(x-2)}}$

dividing is almost the same but between step 1 & 2 you flip the second fraction & change \div to \times

adding & subtracting rational expressions

1. factor the denominator if necessary
2. find a common denominator
3. combine the top of the fractions (FOIL distribute)
4. factor the top if possible
5. cancel with the bottom if possible

ex $\frac{x}{x+2} - \frac{3x}{x}$
 $= \frac{x(x)}{x(x+2)} - \frac{3x(x+2)}{x(x+2)}$
 $= \frac{x^2 - 3x^2 - 6x}{x(x+2)}$
 $= \frac{-2x^2 - 6x}{x(x+2)}$
 $= \frac{-2x(x+3)}{x(x+2)}$
 $= \boxed{-2(x+3)/(x+2)}$

cd: $x(x+2)$