

Quiz Notes

simplifying radical expressions

- factor as much as you can & cancel factors

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

* 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

- factor as much as possible
- cancel from top & bottom and diagonals
- multiply across for the rest

ex 1 $\frac{(x-5)(x+2)}{10x^2+20x} \cdot \frac{3x^2-4x}{x^2(x-2)}$
 $= \frac{(x-5)(x+2)}{10x(x+2)} \cdot \frac{3x(3x-4)}{x^2(x-2)} = \frac{(x-5)(3x-4)}{10x^2(x-2)}$

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

CD: $x(x+2)$

adding & subtracting rational expressions

ex $\frac{x}{x+2} - \frac{3x}{x}$

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

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

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

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

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

- factor the denominator if necessary
- find a common denominator
- combine the top of the fractions (FOIL distribute)
- factor the top if possible
- cancel with the bottom if possible.