# Rational & Factoring – Rewriting of Your Notes

Give two examples of a problem where you will have to distribute

(1) _____ (2) _____

Explain your steps while factoring the following problem: $x^2 + 13x + 36$

| Math Work | Steps |
|---|---|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

What happens to the middle terms when you multiply the following problems $(x + 8)(x – 8)$ ?

_____

_____

_____

How do you factor the following problem $x^2 – 9$ ? Why is this different from the problem above $x^2 + 13x + 36$ ?

_____

_____

_____

$$X^2 + 10x + 16$$

$$\_\_\_\_ \cdot \_\_\_\_ = 16$$

$$10 = \_\_\_\_ + \_\_\_\_$$

$$(x \quad \_\_\_\_ )(x \quad \_\_\_\_ )$$

Rational: is a fraction – cancel out like top & bottom

– remember to make your parentheses

Steps: 1) Factor the top & bottom of all fractions

2) Cancel out top & bottom of same parentheses ( )

$\frac{X^2 + 7x + 12}{x + 4}$ Remember to factor the top $X^2 + 7x + 12$ this will become $(x + 4)(x + 3)$

$\frac{(x + 4)(x + 3)}{(x + 4)}$

$\frac{\cancel{(x + 4)}(x + 3)}{\cancel{(x + 4)}} = (x + 3)$ *Remember the (x+3) is on the top !!

When multiplying fractions together do you multiply across? Yes or No

How do you change a rational division problem into multiplication?

_____

How do you simplify this problem: $\frac{x+2}{x^2+9x+21} \div \frac{2x+4}{x+3}$

Step 1: _____ math step _____

Step 2: _____ math step _____

Step 3: _____ math step _____

Step 4: _____ math step _____