please pick up the warm up

(do front & Back)

&

write down hw problems that you have questions on.

① $\frac{-9x^3}{18x^2} = \frac{-x}{2}$

② $\frac{16x^2y}{28xy} = \frac{4x}{7}$

③ $\frac{-70x^2y}{100xy^3} = \frac{-7x}{10y^2}$

④ $\frac{3(x-5)(5x+1)}{15(x-5)} = \frac{3(5x+1)}{15} = \frac{(5x+1)}{5}$

⑤ $\frac{2x-4}{x-2} = \frac{2(x-2)}{(x-2)} = \boxed{2}$

⑥ $\frac{x^2+4x}{2x+8} = \frac{x(x+4)}{2(x+4)} = \boxed{\frac{x}{2}}$

⑦ $\frac{n^2-16}{4n-12} = \frac{(n-4)(n+4)}{4(n-3)}$

8 $\frac{a-b}{b-a} =$

8 $\frac{a-b}{-(b-a)} = \frac{a-b}{-b+a}$

$5-4 = -4+5$

$-(4-5) \quad 5-4$

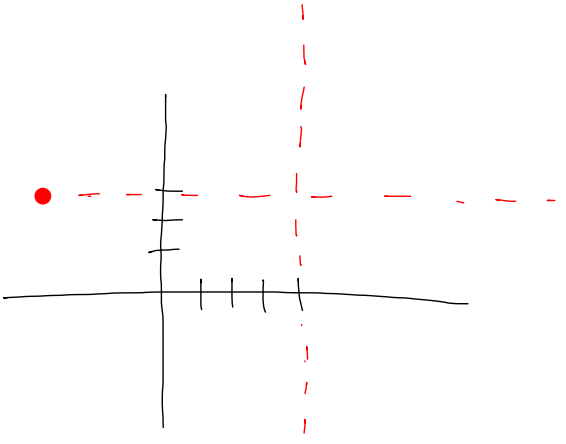
⑨ analyze function

$y = \frac{6x+10}{2x-8}$

a). sketch the graph

- include holes(if any)

-include dashed lined for asymptotes(if any)



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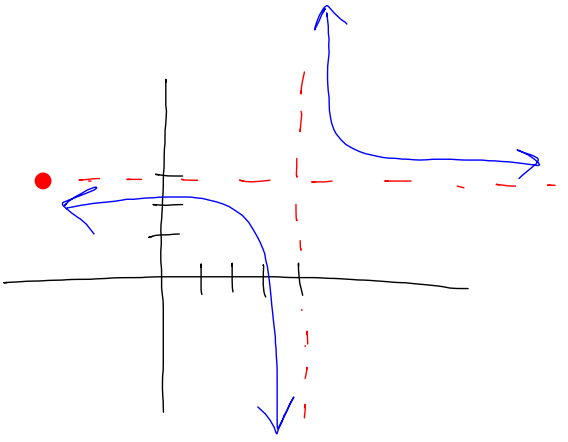


b). Describe all discontinuities

c). Domain

d). Range

LATER TODAY. . .LCQ

- RECENT HW QUESTIONS
- RECENT CLASS "STUFF"
- SOMETHINGS FROM TODAYS LESSON

use your understanding of fractions to:

Multiply and Divide

Rational

Expressions

(ALWAYS factor first!)

Multiplying

Rational Expressions • **Rational** Expressions

a situation will look like...

$$\frac{2x-5}{x+3} \cdot \frac{3(x+3)}{2x+10}$$

which means...

$$\frac{3(2x-5)(x+3)}{(x+3)(2x+10)}$$

do 3-87

just a , c , and d
for now...

Don't worry about the restrictions

REMINDER

-write down problem

-then simplify

a). $\frac{4x+3}{x-5} \cdot \frac{x-5}{x+3}$

$$\frac{(4x+3)(x-5)}{(x-5)(x+3)}$$

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

c). $\frac{2m+3}{3m-2} \cdot \frac{7+4m}{3+2m}$

$$\frac{(2m+3)(7+4m)}{(3m-2)(3+2m)}$$

$2m+3$

$$\frac{7+4m}{3m-2}$$

d). $\frac{(y-2)^3}{3y} \cdot \frac{y+5}{(y+2)(y-2)}$

$$\frac{(y-2)^{\cancel{3}\,2}(y+5)}{3y(y+2)\cancel{(y-2)}}$$

$$\frac{(y-2)^2(y+5)}{3y(y+2)}$$

Dividing

Rational Expressions ÷ **Rational** Expressions

$\frac{1}{2} \div \frac{2}{2}$

Continuing with

3 -87

now do...

b , e , and f

always factor

b). $\frac{x+2}{9x-1} \div \frac{2x+1}{9x-1}$

$\frac{x+2}{9x-1} \cdot \frac{9x-1}{2x+1} = \frac{x+2}{2x+1}$

e). $\frac{15x^3}{3y} \div \frac{10x^2y}{4y^2}$

$\frac{5x^2}{3y} \cdot \frac{4y^2}{10x^2y} = \frac{(15x^3)(4y^2)}{(3y)(10x^2y)} = \frac{60x^3y^2}{30x^2y^2} = 2x$

$\frac{x^3}{x^2} = x$

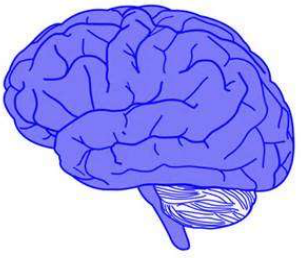
f). $\frac{(5x-2)(3x+1)}{(2x-3)^2} \div \frac{(5x-2)(x-4)}{(x-4)(2x-3)}$

$\frac{(3x+1)}{(2x-3)}$

f). $\frac{(5x-2)(3x+1)}{(2x-3)^2} \div \frac{(5x-2)(x-4)}{(x-4)(2x-3)}$ no canceling factors if ÷

$$\frac{(5x-2)(3x+1)}{(2x-3)} \cdot \frac{(x-4)(2x-3)}{(5x-2)(x-4)}$$

$$\frac{(5x-2)(3x+1)(x-4)(2x-3)}{(2x-3)(5x-2)(x-4)} = \frac{3x+1}{2x-3}$$



Brain Break!

YOU ARE READY!

moving to higher level questions

a). write it down

b). factor EVERYTHING first

c). look for factors to cancel

HOT Potato

Rules of the game:

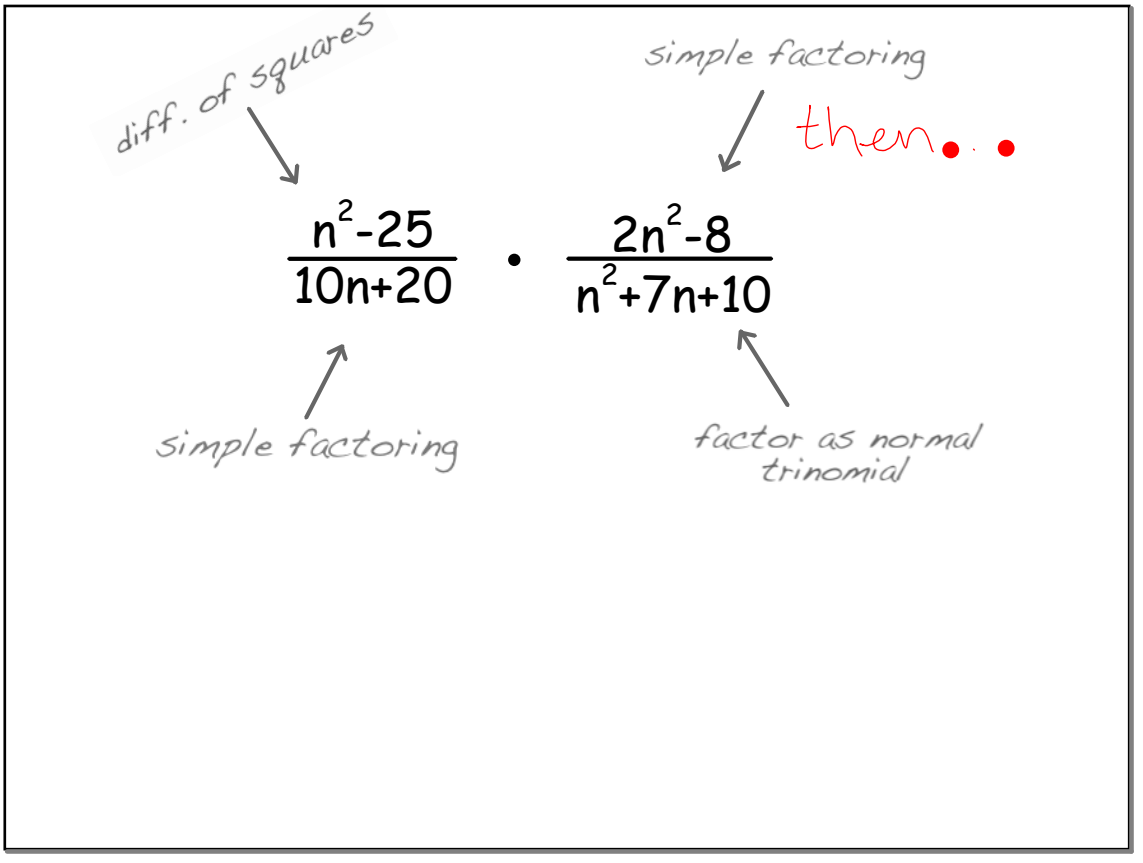
- the team must explain to the pencil holder how to complete the step.

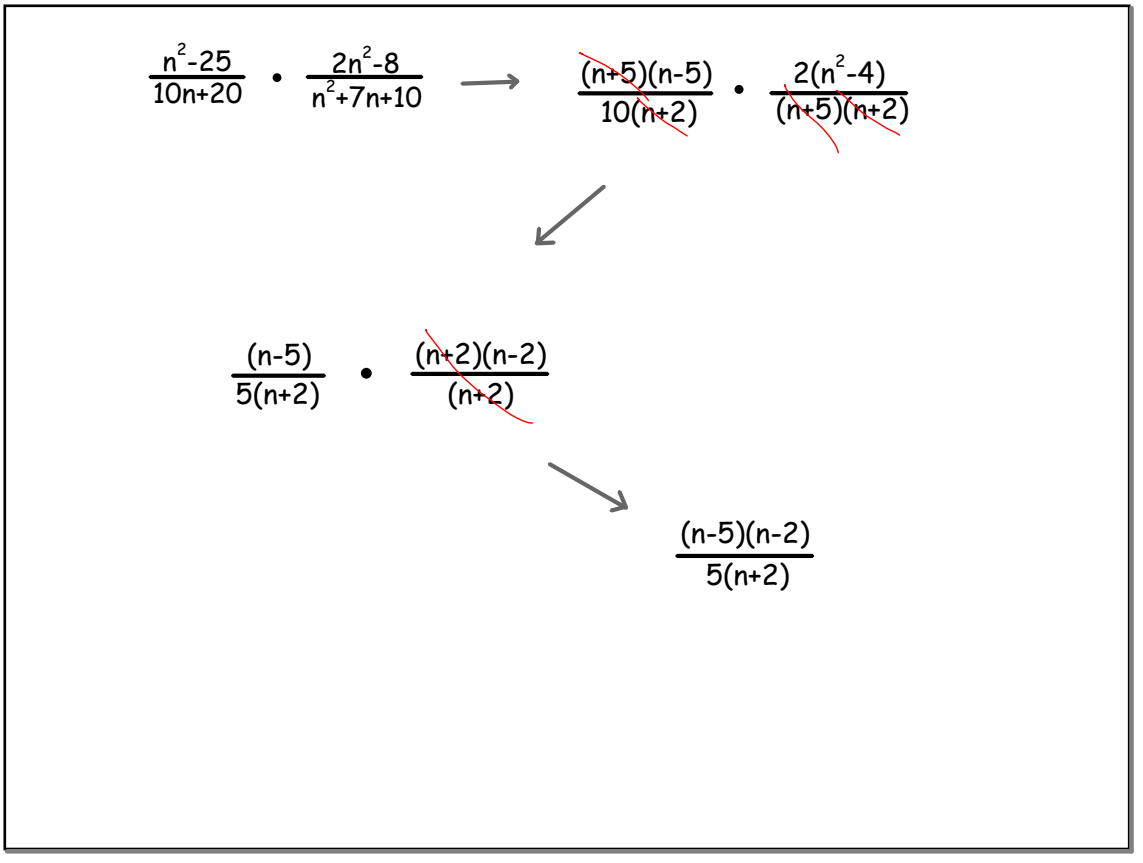
- the person with the pencil can only write down what the team says.

- each person completes one step then passes the pencil.

Must work as a group to complete the problems!

$$\frac{n^2-25}{10n+20} \cdot \frac{2n^2-8}{n^2+7n+10}$$


diff. of squares
simple factoring
then...
$\frac{n^2-25}{10n+20} \cdot \frac{2n^2-8}{n^2+7n+10}$
simple factoring
factor as normal trinomial


$\frac{n^2-25}{10n+20} \cdot \frac{2n^2-8}{n^2+7n+10} \rightarrow \frac{(n+5)(n-5)}{10(n+2)} \cdot \frac{2(n^2-4)}{(n+5)(n+2)}$
$\frac{(n-5)}{5(n+2)} \cdot \frac{(n+2)(n-2)}{(n+2)}$
$\frac{(n-5)(n-2)}{5(n+2)}$

LAST ONE!

$$\frac{12x-18}{x-3} \div \frac{3x^2-9x-12}{6-2x}$$

do all factoring before anything else

simple factoring

simple factoring then...

$$\frac{12x-18}{x-3} \div \frac{3x^2-9x-12}{6-2x}$$

simple factoring

given

$$\frac{12x-18}{x-3} \div \frac{3x^2-9x-12}{6-2x}$$

$$\frac{6(2x-3)}{x-3} \div \frac{3(x^2-3x-4)}{2(3-x)}$$

factored

$$\frac{6(2x-3)}{x-3} \div \frac{3(x-4)(x+1)}{2(3-x)}$$

invert and multiply

$$\frac{6(2x-3)}{x-3} \cdot \frac{2(3-x)}{3(x-4)(x+1)}$$

$$\frac{12x-18}{x-3} \div \frac{3x^2-9x-12}{6-2x}$$

$$\frac{6(2x-3)}{x-3} \div \frac{3(x^2-3x-4)}{2(3-x)}$$

$$\frac{6(2x-3)}{x-3} \div \frac{3(x-4)(x+1)}{2(3-x)}$$

$$\frac{6(2x-3)}{x-3} \cdot \frac{2(3-x)}{3(x-4)(x+1)}$$

$$\frac{12x-18}{x-3} \div \frac{3x^2-9x-12}{6-2x}$$

$$\frac{6(2x-3)}{x-3} \div \frac{3(x^2-3x-4)}{2(3-x)}$$

$$\frac{6(2x-3)}{x-3} \div \frac{3(x-4)(x+1)}{2(3-x)}$$

$$\frac{6(2x-3)}{x-3} \cdot \frac{2(3-x)}{3(x-4)(x+1)}$$

$$\frac{12(2x-3)(3-x)}{3(x-4)(x+1)(x-3)}$$

Assignment

3 .... 90 - 94, 96