Are there any Homework Questions you would like to see on the board?

pp. 128-129 #(6 – 10)ace 7e 9c

p. 129 #7e)

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7. Simplify. State any restrictions on the variables.

e) $\frac{x-1}{x^2-9}+\frac{x+7}{x^2-5x+6}$

$=\frac{x-1}{(x-3)(x+3)}+\frac{x+7}{(x-3)(x-2)}$ LCD: $(x-3)(x+3)(x-2)$

$=\frac{(x-1)(x-2)+(x+7)(x+3)}{(x-3)(x+3)(x-2)}$

$=\frac{x^2-3x+2+x^2+10x+21}{(x-3)(x+3)(x-2)}$ → Quick Factor Check $x=\frac{-b\pm\sqrt{b^2-4ac}}{=(7)^2-4(2)(23)}$ = − ∴ DNF

$=\frac{2x^2+7x+23}{(x-3)(x+3)(x-2)}$ R: $x\neq\pm3,2$

9. Simplify. State any restrictions on the variables. Remember the order of operations.

c) $\frac{p+1}{p^2+2p-35}+\frac{p^2+p-12}{p^2-2p-24}\times\frac{p^2-4p-12}{p^2+2p-15}$ R: $p\neq-7,5,6,-4,-5,3$

$=\frac{p+1}{(p+7)(p-5)}+\frac{(p-3)(p+4)}{(p-6)(p+4)}\times\frac{(p-6)(p+2)}{(p+5)(p-3)}$

$=\frac{p+1}{(p+7)(p-5)}+\frac{p+2}{p+5}$

$=\frac{(p+1)(p+5)+(p+2)(p+7)(p-5)}{(p+7)(p-5)(p+5)}$

$=\frac{p^2+6p+5+(p+2)(p^2+2p-35)}{(p+7)(p-5)(p+5)}$

$=\frac{p^2+6p+5+p^3+2p^2-35p+2p^2+4p-70}{(p+7)(p-5)(p+5)}$

$=\frac{p^3+5p^2-25p-65}{(p+7)(p-5)(p+5)}$

Collect Homework (with name at top) from:

Mon. Feb.12

Tues. Feb.13

Today's Homework Practice includes:

pp. 132-133 #1, 4ac, 6cfg, 7, 8, 9ab, 10bde, 12ac, 13bc, 14cd, 15ce

MCR 3UI Whiteboard Review for Unit 1 Test Date: Feb. 15/18

1. Simplify. $(3x-2)+(2x^2-5x+8)$

$= 3x-2+2x^2-5x+8$

$= 2x^2-2x+6$

2. Simplify $(3x^2-5)^2-(2x^2+5x-4)$

$= 9x^4 - 30x^2 + 25 - 2x^2 - 5x + 4$

$= 9x^4 - 32x^2 - 5x + 29$

$(3x^2-5)(3x^2-5)$

$(a-b)^2$

$= a^2 - 2ab + b^2$

1 2 1

3. Determine if the following polynomials are equivalent.
   Note: What are the two methods? Do they always work?

$y_1 = 3\left(x^2 - 4x + 2\right)$ $y_2 = -2\left(x^2 + 4x - 8\right) + 5\left(x^2 + 1\right) - \left(4x + 15\right)$

$= 3x^2 - 12x + 6$ $= -2x^2 - 8x + 16 + 5x^2 + 5 - 4x - 15$

$= 3x^2 - 12x + 6$

$\therefore y_1 = y_2$

$\therefore$ the polynomials are equivalent.

4. Simplify each of the following.

a) $3xy^2 \times \left(-2x^2y^3\right)$

$= -6x^{1+2}y^{2+3}$

$= -6x^3y^5$

b) $\dfrac{3x^2y \times \left(-5xy^4\right)}{-3x^4y^3}$

$= \dfrac{-15x^{2+1+1}y^{1+4}}{-3x^4y^3}$

$= 5x^{3-4}y^{5-3}$

$= 5x^{-1}y^2$

$= \dfrac{5y^2}{x^1}$

$5y^2 \cdot x^{-1}$

$= 5y^2 \cdot \left(\frac{1}{x}\right)^1$

$= \dfrac{5y^2 \cdot 1}{x}$

$= \dfrac{5y^2}{x}$

$y^2 = \left(\frac{1}{y^2}\right)$

$$\frac{x^2y^{-2}z^{-3}w^{-4}}{a^3b^{-2}c^4d^{-5}}$$

$$= \frac{x^2b^2d^5}{a^3c^4y^2z^3w^4}$$

5. Factor each polynomial completely. over the integers.

a) $4x^4 - 16$

$= 4(x^4 - 4)$

$= 4(x^2 - 2)(x^2 + 2)$

b) $ab + b^2 + 6a + 6b$

$= b(a+b) + 6(a+b)$

$= (a+b)(b+6)$

c) $6x^2 + 5x - 4$

$= 6x^2 - 3x + 8x - 4$

$= 3x(2x-1) + 4(2x-1)$

$= (2x-1)(3x+4)$

-24
$1 \quad 24$
$2 \quad 12$
$-3 + 8$
$4 \quad 6$

d) $y^2 + 9 - 6y - x^2$

$= y^2 - 6y + 9 - x^2$

$= (y-3)^2 - x^2$

let $w = y - 3$

$w^2 - x^2$

$= (w-x)(w+x)$

$= (y-3-x)(y-3+x)$

6. Simplify. $\dfrac{3n^3 - 3n^2}{8n^3 - 12n^2 + 4n}$

$= \dfrac{3n^2(n-1)}{4n(2n^2 - 3n + 1)}$

$= \dfrac{3n^2(n-1)}{4n(2n-1)(n-1)}$

$= \dfrac{3n}{4(2n-1)}$

7. Simplify.

$$\frac{x^2-4}{(x+6)^2}\times\frac{x^2+9x+18}{4-2x}$$

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

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

8. Simplify.

$$\frac{3x^2}{x}+\frac{y}{2xy}-\frac{-2y^2}{x^2}$$

LCD: $2x^2y$

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

$$= \frac{6x^3y+xy-4y^3}{2x^2y}$$

9. Simplify.

$$\frac{5m-n}{2m+n} - \frac{4m^2-4mn+n^2}{4m^2-n^2} \div \frac{6m^2-mn-n^2}{3m+15n}$$

$n^2-8mn-6m^2$

$$= \frac{5m-n}{2m+n} - \frac{(2m-n)(2m-n)}{(2m-n)(2m+n)} \div \frac{(3m+n)(2m-n)}{3(m+5n)}$$

$$= \frac{5m-n}{2m+n} - \frac{(2m-n)(2m-n)}{(2m-n)(2m+n)} \times \frac{3(m+5n)}{(3m+n)(2m-n)}$$

$$= \frac{5m-n}{2m+n} - \frac{3(m+5n)}{(2m+n)(3m+n)}$$

LCD: $(2m+n)(3m+n)$

$$= \frac{(5m-n)(3m+n)}{(2m+n)(3m+n)} - \frac{3(m+5n)}{(2m+n)(3m+n)}$$

$$= \frac{15m^2+5mn-3mn-n^2-3m-15n}{(2m+n)(3m+n)}$$

$$= \frac{15m^2+2mn-n^2-3m-15n}{(2m+n)(3m+n)}$$