Last day's Work: **READ pp.108-112**

pp. 112-114 #(1 – 7)ace, 10 [16, 17]

Work Ahead: p. 132 #1, 4ac, 6cfg, 7, 8, 9ab

1c, 6 Domain } 16
2c
5a
4c

p. 112

1. Simplify. State any restrictions on the variables.

a) $\frac{6-4t}{2}$ b) $\frac{9x^2}{6x^3}$ c) $\frac{7a^2b^3}{21a^4b}$

$= \frac{1}{3}a^{2-4}b^{3-1}$

$= \frac{1}{3}a^{-2}b^2$

$= \frac{1b^2}{3a^2}$ or $\frac{b^2}{3a^2}$

Rest: $a \neq 0, b \neq 0$

p. 112

2. Simplify. State any restrictions on the variables.

a) $\frac{5(x+3)}{(x+3)(x-3)}$ b) $\frac{6x-9}{2x-3}$ c) $\frac{4a^2b-2ab^2}{(2a-b)^2}$

$= \frac{2ab(2a-b)}{(2a-b)(2a-b)}$

$= \frac{2ab}{2a-b}$ R: $2a-b \neq 0$, $2a \neq b$

p. 113

4. Simplify. State any restrictions on the variables.

a) $\dfrac{14x^3 - 7x^2 + 21x}{7x}$

c) $\dfrac{2t(5-t)}{5t^2(t-5)}$

$= \dfrac{2t(-1)(t-5)}{5t^2(t-5)}$

$= \dfrac{-2}{5t}$

R: $t \neq 0$, $t-5 \neq 0$, $t \neq 5$

p. 113

5. Simplify. State any restrictions on the variables.

a) $\dfrac{a+4}{a^2+3a-4}$

c) $\dfrac{x^2-5x+6}{x^2+3x-10}$

$= \dfrac{(a+4)}{(a-1)(a+4)}$

$= \dfrac{1}{a-1}$

R: $a \neq 1, -4$

p. 113

6. State the domain of each function. Explain how you found each answer.

a) $f(x) = \dfrac{2+x}{x}$

Restriction: $x \neq 0$

$D_{f(x)}: \{x \in \mathbb{R} \mid x \neq 0\}$

d) $f(x) = \dfrac{1}{x^2-1}$

$= \dfrac{1}{(x+1)(x-1)}$

Restr: $x \neq -1, x \neq 1$

Domain: $\{x \in \mathbb{R} \mid x \neq \pm 1\}$

Today's Learning Goal(s):

Date: Sept. 10/19
(Every lesson)

By the end of the class, I will be able to:

a) multiply or divide two rational expressions and state the restrictions.

2.6 Multiplying and Dividing Rational Expressions

Ex.1 Simplify. State any restrictions on the variables.

a) $\frac{8}{15} \times \frac{25}{16}$

$= \frac{1 \times 5}{3 \times 2}$

$= \frac{5}{6}$

b) $\frac{12x^2}{5y^3} \times \frac{15y}{8x}$

$= \frac{3 \cdot 3}{2} \cdot x^{2-1} y^{1-3}$

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

$= \frac{9}{2} x \left(\frac{1}{y}\right)^2$

$= \frac{9}{2} x \left(\frac{1}{y^2}\right)$

$= \frac{9x}{2y^2}$

Restrictions:

$x \neq 0, y \neq 0$

c) $\frac{4x+8}{5x^3} \div \frac{6x+12}{25x}$

$= \frac{4x+8}{5x^3} \times \frac{25x}{6x+12}$

$= \frac{4(x+2)}{5x^3} \cdot \frac{25x}{6(x+2)}$

$= \frac{2.5}{x^2(3)}$

$= \frac{10}{3x^2}$

Rest: $x \neq 0$, $x \neq -2$

Simplify. State any restrictions on the variables.

d) $\dfrac{x^2-x-12}{2x^2-9x+4} \div \dfrac{5x^2-45}{2x^2+11x-6}$

$= \dfrac{(x-4)(x+3)}{(2x-1)(x-4)} \div \dfrac{5(x^2-9)}{(2x-1)(x+6)}$ $\quad 5(x-3)(x+3)$

$= \dfrac{(x-4)(x+3)}{(2x-1)(x-4)} \times \dfrac{(2x-1)(x+6)}{5(x-3)(x+3)}$

$= \dfrac{x+6}{5(x-3)}$

$2x-1$, $x+6$

$2 \quad 6$

$1 \quad 1$

$12 - 1 = 11$

R: $2x-1 \neq 0$, $x-4 \neq 0$, $x+6 \neq 0$, $x-3 \neq 0$, $x+3 \neq 0$

$2x \neq 1$ $\quad x \neq 4$ $\quad x \neq -6$ $\quad x \neq 3$ $\quad x \neq -3$

$x \neq \frac{1}{2}$

Rest: $x \neq \frac{1}{2}, 4, \pm 3, -6$

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

Last day's work: pp. 112-114 #(1 – 7)ace, 10 [16, 17]

Today's Homework Practice includes:

READ pp.117-121

pp. 122-123 #(4 – 7)ac, 8, 9, 11 [13]

Work Ahead: p. 132 #1, 4ac, 6cfg, 7, 8, 9ab

Note for p.132 **the textbook is *incorrect for*** 8a, 8e, and 13c

The correct answers are:

8a) $2x^2y\left(y^3-3x^3y^2+4x\right)$

8e) $(a-2)(a+2)\left(a^2+4\right)$

13c) $\dfrac{x(x-1)}{y(y+1)}$

$$\frac{a^{-2}b^{3}c^{-4}d^{5}}{e^{6}f^{-7}g^{8}h^{-9}}$$

$$= \frac{b^{3}d^{5}f^{7}h^{9}}{e^{6}g^{8}a^{2}c^{4}}$$