

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

CheckPoint 1.2

p. 112

1. Simplify. State any restrictions on the variables.

a) $\frac{6 - 4t}{2}$

b) $\frac{9x^2}{6x^3}$

$$\begin{aligned} & \textcircled{c} \frac{1 \cancel{7} a^2 b^3}{3 \cancel{2} \cancel{1} a^4 b^1} \\ &= \frac{1}{3} a^{2-4} b^{3-1} \\ &= \frac{1}{3} a^{-2} b^2 \\ &= \frac{1}{3a^2} \text{ or } \frac{b^2}{3a^2} \end{aligned}$$

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) $\frac{6x-9}{2x-3}$

$$\textcircled{c} \frac{4a^2b - 2ab^2}{(2a-b)^2}$$

$$\begin{aligned} &= \frac{2ab \cancel{(2a-b)}}{\cancel{(2a-b)}(2a-b)} \\ &= \frac{2ab}{2a-b} \quad R: \begin{array}{l} 2a-b \neq 0 \\ 2a \neq b \end{array} \end{aligned}$$

p. 113

4. Simplify. State any restrictions on the variables.

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

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

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

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

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

p. 113

5. Simplify. State any restrictions on the variables.

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

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

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

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

R: $a \neq 1, -4$

p. 113

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

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

Restriction: $x \neq 0$

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

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

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

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

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

p. 113

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

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

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

Restriction: $x \neq 0$

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

Today's Learning Goal(s):

Date: Feb. 11/20
(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.

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

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

$$= \frac{5}{6}$$

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

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

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

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

Rest: $x \neq 0, y \neq 0$

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

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

$$= \frac{4(x+2)}{15x^3} \times \frac{5 \cdot 25x}{6(x+2)}$$

$$= \frac{2 \cdot 5}{x^2 \cdot 3}$$

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

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

Simplify.

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

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

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

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

Restrictions:

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

$$\left. \begin{array}{l} x-4 \neq 0 \\ x \neq 4 \end{array} \right\} \begin{array}{l} 2x-1 \neq 0 \\ 2x \neq 1 \\ x \neq \frac{1}{2} \end{array}$$

$$\left. \begin{array}{l} 2x^2 - 9x + 4 \\ = 2x^2 - 1x - 8x + 4 \\ = x(2x-1) - 4(2x-1) \\ = (2x-1)(x-4) \end{array} \right\} \begin{array}{l} P: 8 \\ S: -9 \\ -1-8 \\ -2-4 \end{array}$$

A: 2 C: -6

	1	2		1	6
x	3			2	3
2	2		x	1	
	1-2			2	6
	2	3		2	4
	-4	3		1-2	
	= -1			= -1	
				(x+6)	
				(2x-1)	
				= 10-1	
				= 11	

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:

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

$$8e) (a-2)(a+2)(a^2+4)$$

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