Practice Assessment

Practice provides practice and allows you to self-reflect on your conceptual understanding of the *Lesson* skills. You will mark your work for *Practice* in each *Workbook* according to the following rubric.

Category	Strategy and Procedures	Response to Questions
	I have…	*I have…*
4	• used efficient and effective strategies to solve the problem(s)	• provided detailed explanations and followed directions appropriately to complete all questions
3	• used effective strategies to solve the problem(s)	• provided clear explanations and followed directions adequately to complete most questions
2	• used effective strategies inconsistently to solve the problem(s)	• provided incomplete explanations and followed some directions to complete a few questions
1	• used ineffective strategies to solve the problem(s)	• provided incomplete explanations and have not followed directions to complete some questions

Complete *Practice* exercises using your best work, showing all relevant steps needed to arrive at your solution. Refer to the *Module* to review lesson instructions. Contact your teacher for assistance or clarification as needed, or to investigate the topic further.

Check and correct your work using the solutions provided in *Appendix 2: Solutions* in the *Module*.

Practice is worth 8 marks; your mark can help you gauge your understanding of *Lesson* material.

After you have assessed your work, reflect on your understanding of the concepts addressed in the *Practice* exercises in the table provided.

Lesson 5.1: Introduction to Rational Expressions

Complete the *Practice* below. When you have completed all the questions for *Lesson 5.1 Practice – I* with your best work, mark your work by first comparing your answers to the solutions provided in *Appendix 2: Solutions*. Then, apply the rubric found at the beginning of the *Workbook*.

Practice – I

1. Determine the non-permissible values for the rational expressions.

   a. $\frac{44}{p-5}$

   b. $\frac{4x-1}{3x^2-5x+2}$

2. Simplify the rational expressions, and state any non-permissible values.

a. $\dfrac{9w^2xy^3}{12wx^3y^3}$

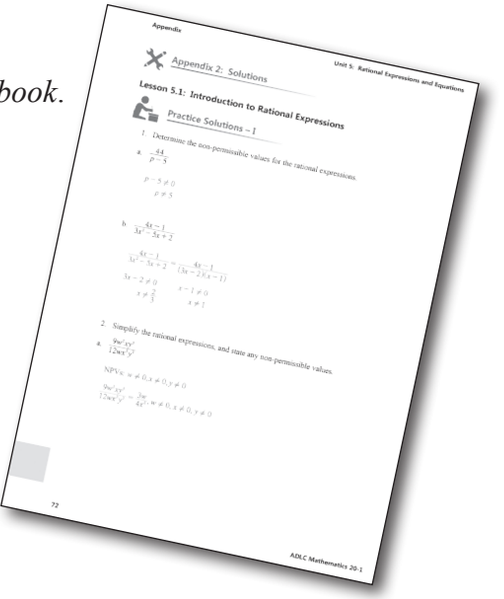
b. $\dfrac{20a^2b - 25ab^2}{16a^2 - 25b^2}$

c. $\dfrac{2x^2 - 5x + 3}{5x^2 - 3x - 2}$

3. Two students, Matt and Quinn, simplified the rational expression $\frac{6x^2+13x-5}{2x^2+3x-5}$. Matt's answer is $\frac{3x-1}{x-1}, x \neq 1$ and Quinn's answer is $\frac{3x-1}{x-1}, x \neq 1, -\frac{5}{2}$. Who is correct, and why?

4. The volume of a cone is $d^2-3d-10$. If the radius of the cone is $d-5$, write a simplified rational expression that represents the height of the cone. Recall the formula for volume of a cone is $V=\frac{\pi r^2 h}{3}$, where h is the height and r is the radius.

Mark your work for *Lesson 5.1 Practice – I* using the solutions provided in *Appendix 2: Solutions*. Then, apply the rubric found at the beginning of the *Workbook*.


Appendix

Unit 5: Rational Expressions and Equations

Appendix 2: Solutions

Lesson 5.1: Introduction to Rational Expressions

Practice Solutions – I

1. Determine the non-permissible values for the rational expressions.

a. $\frac{-44}{p-5}$

$p - 5 \neq 0$

$p \neq 5$

b. $\frac{4x-1}{3x^2-3x+2}$

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

$3x - 2 \neq 0$ $\quad x - 1 \neq 0$

$x \neq \frac{2}{3}$ $\quad x \neq 1$

2. Simplify the rational expressions, and state any non-permissible values.

a. $\frac{9w^2y^2}{12w^3y^2}$

NPVs: $w \neq 0, x \neq 0, y \neq 0$

$\frac{9w^2y^2}{12w^3y^2} = \frac{3w}{4x^2}, w \neq 0, x \neq 0, y \neq 0$

72

ADLC Mathematics 20-1

Reflect on your understanding of the concepts addressed in the *Practice* exercises in the table provided.

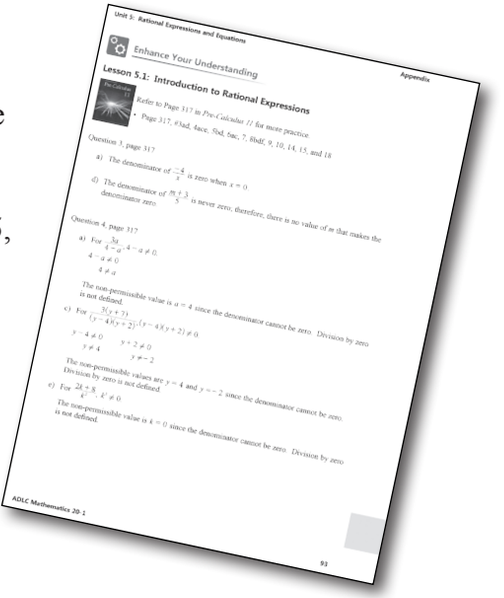
Question Number	Got it!	Almost there…	Need to retry or ask for help.	Similar questions from *Pre-Calculus 11*
1				p. 317 #3ad, 4ace, 5bd
2				p. 318 #6ac, 7, 8bdf
3				p. 318 #9, 10, 14
4				p. 318 #15, 18

You may proceed to *Explore Your Understanding Assignment* on the next page of this *Workbook*.

Note: Before you complete *Explore Your Understanding*, you may review your skills and get more practice by completing the following problems in *Pre-Calculus 11*.

- Page 317 #3ad, 4ace, 5bd, 6ac, 7, 8bdf, 9, 10, 14, 15, and 18

Check your work in *Enhance Your Understanding*.


Unit 5: Rational Expressions and Equations

Enhance Your Understanding

Appendix

Lesson 5.1: Introduction to Rational Expressions

Pre-Calculus

- Refer to Page 317 in *Pre-Calculus 11* for more practice.
- Page 317, #3ad, 4ace, 5bd, 6ac, 7, 8bdf, 9, 10, 14, 15, and 18

Question 3, page 317

a) The denominator of $\frac{-5}{x}$ is zero when $x = 0$.

d) The denominator of $\frac{m+3}{-5}$ is never zero, therefore, there is no value of m that makes the denominator zero.

Question 4, page 317

a) For $\frac{3a}{4-a}$, $4 - a \neq 0$.

$4 - a \neq 0$

$4 \neq a$

The non-permissible value is $a = 4$ since the denominator cannot be zero. Division by zero is not defined.

c) For $\frac{3(y+7)}{(y-4)(y+2)}$, $(y-4)(y+2) \neq 0$.

$y - 4 \neq 0$ $\quad y + 2 \neq 0$

$y \neq 4$ $\quad y \neq -2$

The non-permissible values are $y = 4$ and $y = -2$ since the denominator cannot be zero. Division by zero is not defined.

e) For $\frac{2k+8}{k}$, $k \neq 0$.

The non-permissible value is $k = 0$ since the denominator cannot be zero. Division by zero is not defined.

ADLC Mathematics 20-1

93