# **Algebra 2 Unit Test Guide**

## Rational Expressions & Equations Unit Test

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| **Item** | **Lesson Coverage** | **Objective** | **Mathematical Practice Standard** | **Lesson Page** | **Assessment Item** |
| 1 | Lesson 2: Rational Expressions | In this section, you will identify rational expressions. | Make sense of problems and persevere in solving them. | p. 2-6 | What value would cause the rational expression  to be undefined?  𝑥=\_\_\_  Answer: -4 |
| 2 | Lesson 2: Rational Expressions | In this section, you will create equivalent rational expressions. | Make sense of problems and persevere in solving them. | p. 8-13 | Myrna was asked to create an equivalent form of the rational expression . Which of the following is a correct equivalent form?  Answer: |
| 3 | Lesson 2: Rational Expressions | In this section, you will create equivalent rational expressions. | Make sense of problems and persevere in solving them. | p. 8-13 | Monserrat was asked to create an equivalent form of the rational expression . Which of the following is a correct equivalent form?  Answer: |
| 4 | Lesson 2: Rational Expressions | In this section, you will compare rational expressions by writing them in different, equivalent forms. | Look for and make use of structure. | p. 15-19 | Express in simplest form:.  Answer: |
| 5 | Lesson 2: Rational Expressions | In this section, you will compare rational expressions by writing them in different, equivalent forms. | Look for and make use of structure. | p. 15-19 | Express in simplest form: .  Answer: |
| 6 | Lesson 3: Multiplication & Division of Rational Expressions | In this section, you will multiply rational expressions. | Make sense of problems and persevere in solving them. | p. 2-6 | Write the polynomial expression in simplest form: .  Answer: |
| 7 | Lesson 3: Multiplication & Division of Rational Expressions | In this section, you will multiply rational expressions. | Make sense of problems and persevere in solving them. | p. 2-6 | Write the polynomial expression in simplest form: .  Answer: |
| 8 | Lesson 3: Multiplication & Division of Rational Expressions | In this section, you will divide rational expressions. | Make sense of problems and persevere in solving them. | p. 8-13 | Express in simplest form: .  Answer: |
| 9 | Lesson 3: Multiplication & Division of Rational Expressions | In this section, you will divide rational expressions. | Make sense of problems and persevere in solving them. | p. 8-13 | Express in simplest form: .  Answer: |
| 10 | Lesson 4: Addition & Subtraction of Rational Expressions | In this section, you will add rational expressions. | Make sense of problems and persevere in solving them. | p. 2-7 | Add the rational expressions to find the sum: .  Answer**:** |
| 11 | Lesson 4: Addition & Subtraction of Rational Expressions | In this section, you will add rational expressions. | Make sense of problems and persevere in solving them. | p. 2-7 | Add the rational expressions to find the sum: .  Answer: |
| 12 | Lesson 4: Addition & Subtraction of Rational Expressions | In this section, you will subtract rational expressions with like and unlike denominators. | Make sense of problems and persevere in solving them. | p. 9-14 | Subtract .  Answer: |
| 13 | Lesson 4: Addition & Subtraction of Rational Expressions | In this section, you will subtract rational expressions with like and unlike denominators. | Make sense of problems and persevere in solving them. | p. 9-14 | Subtract the rational expressions , and then simplify the difference.  Answer: |
| 14 | Lesson 5: Solving Rational Equations | In this section, you will solve rational equations by creating equivalent expressions. | Make sense of problems and persevere in solving them. | p. 2-9 | What is the solution(s) of the equation ?  Answer: -1 and |
| 15 | Lesson 5: Solving Rational Equations | In this section, you will solve rational equations by multiplying both sides by a common denominator. | Make sense of problems and persevere in solving them. | p. 11-16 | Solve the rational equation for x: .  Answer: |
| 16 | Lesson 5: Solving Rational Equations | In this section, you will use models involving rational equations to solve real-world problems. | Attend to precision. | p. 18-23 | Combined, two production lines can make 315 light bulbs in 1 hour. Production line A produces light bulbs 1.1 times faster than production line B. Using a rational equation, which of the following correctly calculates how many light bulbs can be produced in 1 hour using only production line A?  Answer: 165 light bulbs |
| 17 | Lesson 5: Solving Rational Equations | In this section, you will use models involving rational equations to solve real-world problems. | Attend to precision. | p. 18-23 | Alone, it takes Khalil 10 hours to complete a one-hour long presentation. It takes Teddy 8 hours to complete a one-hour long presentation. Using a rational equation, which of the following correctly calculates how long it would take them to complete a one-hour long presentation if they worked together?  Answer: 4.44 hours |
| 18 | Lesson 2: Rational Expressions | In this section, you will identify rational expressions. | Make sense of problems and persevere in solving them. | p. 2-6 | In 1–2 sentences, discuss how to determine the values that make a rational expression undefined.  Answer: The student should note that the values that make the expression undefined are the values that make the denominator equal to zero. |
| 19 | Lesson 5: Solving Rational Equations | In this section, you will solve rational equations by creating equivalent expressions. | Make sense of problems and persevere in solving them. | p. 2-9 | Solve the following equation:  and show your work.  Answer:  Check solutions.  gives us a zero in the denominator, therefore it is not a solution. |
| 20 | Lesson 5: Solving Rational Equations | In this section, you will solve rational equations by multiplying both sides by a common denominator. | Make sense of problems and persevere in solving them. | p. 11-16 | In 1–2 sentences, answer the following prompt:  What is an extraneous solution of a rational equation?  Answer: The student should explain that an extraneous solution of a rational equation is a value that appears as a solution when solving the equation, but is not included in the equation’s domain, or what makes the equation undefined when substituted for x. |