**A2 Unit Exam – Polynomial and Rational Expressions**

Topics Covered

* Simplify polynomials by combining like terms
* Add and subtracting polynomials
* Multiply and divide monomials
* Multiply monomials and polynomials
* Factor monomials from polynomials
* Multiply polynomials using the distributive property
* Factor quadratics with a lead coefficient of 1
* Simplify rational expressions

Standards

A.APR.1: Understand that polynomials form a system analogous to the integers, namely, that they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.

* High Emphasis
* Ex. Simplify or divide: 

A.SSE.2: Use the structure of an expression to identify ways to rewrite it.

* Low Emphasis
* Ex. Find a value for**,** a value for, and a value for, so that.
* Ex. Identify two expressions that are equivalent forms of the expression: 

A.SSE.3: Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.

* Low Emphasis
* Ex. Find the perimeter and area of the given rectangle.

**A2 Unit Exam – Polynomial and Rational Expressions**

**Answer Key**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **#** | **Correct** |  | **#** | **Correct** |  | **#** | **Correct** |  | **#** | **Correct** |  | **#** | **Correct** |  | **#** | **Correct** |
| 1 | B |  | 4 | C |  | 7 | B |  | 10 | D |  | 13 | D |  | 16 | A |
| 2 | A |  | 5 | B |  | 8 | B |  | 11 | A |  | 14 | C |  | 17 | B |
| 3 | A |  | 6 | C |  | 9 | B |  | 12 | D |  | 15 | C |  | 18 | C |

19. Rubric

 2-Points Examinee identifies 3 correct responses: B, C, and D.

 1-Point Examinee identifies 2 correct responses.

 0-Point Examinee identifies 1 or 0 correct response.

20. Rubric

 2-Points Examinee finds the correct expression for the perimeter, , AND

area , using the fewest number of terms.

 1-Point Examinee finds the correct expression for the perimeter, , OR

area , using the fewest number of terms.

 0-Point Examinee does not attempt item or the response is completely irrelevant or completely incorrect.

EXTRA CREDIT

21. C

22. C

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**A2 Unit Exam – Polynomial and Rational Expression**

1. Simplify the polynomial: 

 A. 

 B. 

 C. 

 D. 

2. Which expression is the simplified form of?

 A. 

 B. 

 C. 

 D. 

3. Which expression is equivalent to?

 A. 

 B. 

 C. 

 D. 

4. Which expression is equivalent to?

 A. 

 B. 

 C. 

 D. 

5. Which expression is equivalent to?

 A. 

 B. 

 C. 

 D. 

6. An accountant is using the expressions  and  to calculate the total compensation for employees in two departments of a business. What is the sum of the two expressions?

 A. **

 B. **

 C. **

 D. **

7. Which expression is equivalent to?

 A. 

 B. 

 C. 

 D. 

8. Which expression is equivalent to?

 A. 

 B. 

 C. 

 D. 

9. Which expression is equivalent to?

 A. 

 B. 

 C. 

 D. 

10. Which expression is equivalent to?

 A. 

 B. 

 C. 

 D. 

11. Which expression is equivalent to?

 A. 

 B. 

 C. 

 D. 

12. Which expression is equivalent to?

 A. 

 B. 

 C. 

 D. 

13. Simplify: 

 A. 

 B. 

 C. 

 D. 

14. Simplify: 

 A. 

 B.  

 C. 

 D. 

15. Which expression factors the expression?

 A. 

 B. 

 C. 

 D. 

16. Which expression factors the expression?

 A. 

 B. 

 C. 

 D. 

17. Which expression factors the expression?

 A. 

 B. 

 C. 

 D. 

18. Consider the polynomial expression. Which of these are factors of the expression?

 A 

 B 

 C 

 D 

19. Identify three expressions that are equivalent forms of the expression:. Select three answers.

 A. 

 B. 

 C. 

 D. 

 E. 

 F. 

20. The side lengths of a rectangle are marked as shown in the diagram.

 

Using the fewest number of terms (simplest form), write an expression to represent the perimeter of the rectangle.

|  |
| --- |
|  |

Using the fewest number of terms (simplest form), write an expression to represent the area of the rectangle.

|  |
| --- |
|  |

**Extra Credit**

21. Four expressions are shown below.

 I 

 II 

 III 

 IV 

 The expression  is equivalent to

 A. I and II, only

 B. II and IV, only

 C. I, II, and IV

 D. II, III, and IV

22. Which of these is an equivalent form of?

 A. 

 B. 

 C. 

 D. 

**A2 Unit Exam – Polynomial and Rational Expressions**

**Score Sheet and Report**

|  |  |  |  |
| --- | --- | --- | --- |
| # | Answer | Subdomain Performance | Subdomain |
| 1 |  |  /2 % | Simplify Polynomials by Combining Like Terms |
| 2 |  |
| 3 |  |  /5 % | Add and Subtract of Polynomials |
| 4 |  |
| 5 |  |
| 6 |  |
| 7 |  |
| 8 |  |  /5 % | Multiply Polynomials |
| 9 |  |
| 10 |  |
| 11 |  |
| 12 |  |
| 13 |  |  /2 % | Simplifying Rational Expressions |
| 14 |  |
| 15 |  |  /4 % | Factoring Quadratic Expressions (when *a* = 1) |
| 16 |  |
| 17 |  |
| 18 |  |
| 19 |  |  /2 | Multiple Selected ResponsePolynomial Expressions |
|  |
|  |
| 20 |  | Constructed Response – Record Your Answer Below |  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  /2 |
| 21 |  |  +  | Extra Credit |
| 22 |  |
|  |  |  |  |
| Total |  /22 % |