# Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_\_\_\_\_\_\_

## **REVIEW FOR SPRING SEMESTER**

1. Perform the given operations using the following matrices. (9.2)

|  |  |
| --- | --- |
|  | 1.
 |
| 1.
 |

1. State the dimensions of each matrix. (9.1)
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ X \_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Solve for each variable. (9.1)
4. Simplify each radical. (9.3)

|  |  |
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|  |  |

1. Analyze the following quadratic functions. (10.1)

|  |  |
| --- | --- |
| 1.

 Vertex:  Axis of Symmetry:  Max or Min Value:  Domain:  Range:  X-Intercepts:  |  |

1. Factor the following polynomials using greatest common factor. (10.2)

|  |  |
| --- | --- |
|  |  |

1. Factor the following polynomials using difference of two squares. (10.2)

|  |  |
| --- | --- |
| 1.
 |  |

1. Factor the following polynomials. (10.3 & 10.4)

|  |  |
| --- | --- |
|  | 1.
 |
| 1.
 | 1.
 |

1. Solve by FACTORING. (11.1)

|  |  |
| --- | --- |
| 1.

Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 1.

Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

1. Solve each of the following using square roots. Leave answers in simple radical form, when necessary. (11.2)

|  |  |
| --- | --- |
| Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 1.

Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

1. Find the number of solutions for the following quadratic equations using the discriminant. Then, solve each equation using the quadratic formula. (11.3)

23.

Number of Solutions: \_\_\_\_\_ Solutions:\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Simplify the following using . Remember standard form. (12.1)

|  |  |
| --- | --- |
| 24.  | 25.  |

1. Add or Subtract the following complex numbers. (12.2)

|  |  |
| --- | --- |
| 26.  | 27.  |

1. Multiply the following complex numbers. (12.2)

|  |  |
| --- | --- |
| 28.  | 29.  |
| 30.  | 31.  |

1. Solve the following quadratic equations using square roots. (12.3)

|  |  |
| --- | --- |
| Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_ | 1.

Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

1. Find the number and type of solutions for the following quadratic equations using the discriminant. Then, solve each equation using the quadratic formula. (12.4)

34.

Number & Type of Solutions: \_\_\_\_\_\_\_\_ Solutions:\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Write each polynomial in standard form. Then, classify it by degree and by number of terms. (13.1)

|  |  |
| --- | --- |
| 35. Standard Form: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 36. Standard Form: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

1. Use synthetic division to divide the following. (13.2)

|  |
| --- |
| 37. Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

1. Factor. (13.3 & 13.4)

|  |  |
| --- | --- |
| 38. Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 39. Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 40. Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 41. Solution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

1. Add or Subtract. Simplify, when necessary. (14.1)

|  |
| --- |
| 42. \_\_\_\_\_\_\_\_\_\_\_\_ |
| 43. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

1. Multiply. Simplify, when necessary. (14.2)

|  |  |
| --- | --- |
| 44. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 45. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 46. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 47. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

1. Divide. Simplify, when necessary. (14.3)

|  |  |
| --- | --- |
| 48. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 49. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

1. Simplify the following radical expressions using the root chart for help.

(15.1a & 15.1b)

|  |  |
| --- | --- |
| 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
 | 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
 |
| 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
 | 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
 |

1. Rewrite each expression using rational (fractional) exponents. (15.2)

|  |
| --- |
| 1. \_\_\_\_\_\_\_\_\_\_\_\_
 |

1. Rewrite each expression using radical notation. (15.2)

|  |
| --- |
| 1. \_\_\_\_\_\_\_\_\_\_\_
 |

1. Evaluate each expression by rewriting in radical notation. (15.2)

|  |
| --- |
| 1. \_\_\_\_\_\_\_\_\_\_\_
 |

1. Solve the following equations. (15.3 & 15.4)

|  |  |
| --- | --- |
|  |  |
|  |  |

1. Perform the following operations on the given functions.

|  |
| --- |
| 1. Let and . (16.1)
 |
|  |  |  |
| 1. Let and . (16.2)
 |
|   |  |
| 1. Let and . (16.3)
 |
|   |  |

1. Rewrite each equation in exponential form. (17.1)

|  |
| --- |
| 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
 |

1. Rewrite each equation in logarithmic form. (17.1)

|  |
| --- |
| 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
 |

1. Evaluate each logarithm by writing an equation in exponent form. (17.2)

|  |
| --- |
| 1. \_\_\_\_\_\_\_\_\_\_\_\_
 |

1. Write each logarithmic expression as a single logarithm. (17.3)

|  |  |
| --- | --- |
| 67. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 68. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 69. \_\_\_\_\_\_\_\_\_\_\_\_\_ |

1. Expand each logarithmic expression. (17.3)

|  |  |
| --- | --- |
| 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
 | 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
 |
| 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
 |

1. Solve the following logarithmic equations. (17.4)

|  |  |
| --- | --- |
| 1.

 \_\_\_\_\_\_\_\_\_\_\_ | 1.

 \_\_\_\_\_\_\_\_\_\_\_ |

1. Solve the following equations using properties of logarithms. (17.4)

|  |  |
| --- | --- |
| 1.

 \_\_\_\_\_\_\_\_\_\_\_ |  \_\_\_\_\_\_\_\_\_\_\_ |

**ANSWERS**