**Senior Final Exam Review 2015**

Multiple Choice Practice (**75pts**)

**Unit 1**

Patterns & Expressions

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| 1. Which of the following is the *seventh* term in the pattern below? | 1. Which of the following is the *eighth* term in the pattern below? |

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| 1. Which of the following algebraic expressions represents the pattern in the group of figures below?  |  |  |  | | --- | --- | --- | |  |  |  | | 1. Which of the following expressions represents the number of circles in the th figure? |

Solving Absolute Value Equations & Inequalities

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| 1. Which of the following is the solution the absolute value equation below? | 1. Solve the absolute value equation below. Graph your answer on the number line provided. |

**Unit 2A**

Evaluating Functions

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| 1. Let. Which of the following is the value of 2. 16 3. 40 | 1. If, then find. |

Composition of Functions

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| 1. If and then find the value of | 1. Let and. Which of the following is the value of? 2. 30 3. 33 |

Characteristics of Functions

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| 1. Which of the following relations does not represent a function?  |  |  | | --- | --- | |  |  | |  |  | |  |  | |  | |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  |  | 0 |  | |  | 3 | 5 | 4 | 3 | | | 1. Which of the following relations does not represent a function?  |  |  | | --- | --- | |  |  | |  |  | |  |  | |  | |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  |  | 0 | 1 | |  | 7 |  | 7 |  | | |

**Unit 2B**

Slope of a Line

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| 1. Line passes through the points and. Which of the following is the slope of line? | 1. Find the slope of the line passing through the points and. |

Writing Linear Equations

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| 1. Write the equation for the line that contains the point and has a slope of. | 1. Write the equation for the line that goes through the point and has a slope of. |

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| 1. Write the equation for the line that goes through the point and. | 1. Write the equation for the line that goes through the point and. |

Graphing Inequalities

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| 1. Graph the solution of the inequality below on the coordinate grid provided. | 1. Which of the following is the solution to the inequality below?  |  |  | | --- | --- | |  |  | |  |  | |  |  | |  |  | |

**Unit 3**

Solving Systems of Equations by Graphing

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| 1. Solve the system of equations by graphing.      |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |
| 1. Solve the system of equations by graphing. |

Solving Systems of Equations by Substitution

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| 1. What is the **value of**in the system of equations below? | 1. Use substitution to solve the system of equations below. |

Solving Systems of Equations by Elimination

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| 1. Use elimination to find the solution of the system of equations below. | 1. What is the **value of**in the system of equations below? |

**Unit 4**

Factoring Quadratic Equations

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| 1. A diagram of Desiree’s rectangular yard is shown below.   length  Area  An expression representing the area of Desiree’s yard is as follows:  **Area of yard**:  Which of the following expressions represents the width and length of Desiree’s yard? | 1. A diagram of Dillon’s rectangular pool is shown below.   length  Area  An expression representing the area of Dillon’s pool is as follows:    **Area of yard**:  Write a pair of expressions that could represent the length and width of Dillon’s yard. |

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| 1. When factored the quadratic equals. What is the value of? | 1. When factored the quadratic equals. What is the value of? 2. 6 |

**Unit 5**

Solving by Factoring

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| 1. What are the solutions of the equation below? | 1. What are the solutions of the equation below? |

Writing Equations from Graphs

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| 1. Carolina graphed a parabola on the coordinate grid below.     What is the equation the parabola in vertex form? | 1. A parabola is graphed on the coordinate grid below.     Which of the following is the equation of the parabola? |

Graphing in Vertex Form

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| 1. Which of the following is the graph of the quadratic equation below?  |  |  | | --- | --- | |  |  | |  |  | |  |  | |  |  | | 1. Sketch a graph of the quadratic equation below on the coordinate grid provided. |

Converting Between Standard & Vertex Form

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| 1. Convert the quadratic function below from vertex form to ***standard form***. | 1. Which of the following is the quadratic function below written in ***standard form***? |

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| 1. Which of the following is the quadratic function below written in ***vertex form***? | 1. Convert the quadratic function below from standard form to ***vertex form***. |

Quadratic Formula

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| 1. Use the quadratic formula to solve the quadratic equation. | 1. Which of the following is the solution to the quadratic equation below? |

Simplifying Negative Square Roots

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| 1. Which of the following is equivalent to the expression below? | 1. Write the expression below in **simplest** form. |

Section 7: Operations with Complex Numbers

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| 1. Which of the following is equivalent to the expression below? | 1. Which of the following is equivalent to the expression below? |

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| 1. Which of the following is equivalent to the expression below? | 1. Which of the following is equivalent to the expression below? |

**Unit 6**

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| Exponent Rules |  | |
| 1. Which of the following is equivalent to the expression below? | | 1. Which of the following is equivalent to the expression below? |

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| 1. Which of the following is equivalent to the expression below? | 1. Which of the following is equivalent to the expression below? |

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| 1. Which of the following is equivalent to the expression below? | 1. Which of the following is equivalent to the expression below? 2. 1 |

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| 1. Which of the following is the expression below in **simplest** form? | 1. Which of the following is the expression below in **simplest** form? |

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| Solving Cubic Equations |  |
| 1. Which of the following is the expression below in factored form? | 1. Factor the expression below **completely**. |

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| 1. Solve the cubic equation below. | 1. Which of the following are the solutions of the cubic equation below? |

**Unit 7**

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| Radicals & Rational Exponents | |  |
| 1. Use the properties of square roots to write the expression below in simplest form. | 1. Use the properties of cube roots to write the expression below in simplest form. | |

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| 1. Use the properties of cube roots to write the expression below in simplest form. | 1. Which of the following is equivalent to the expression below? |

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| 1. Which of the following is equivalent to the expression below? | 1. Which of the following is equivalent to the expression below? |

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| 1. Which of the following is equivalent to the expression below? | 1. Which of the following is equivalent to the expression below? |

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| Radical Equations |  |
| 1. Which of the following is the solution of the square root equation below? | 1. Solve the square root equation below. Be sure to check for ***extraneous solutions.*** |

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| 1. Solve the radial equation below. Be sure to check for ***extraneous solutions.*** | 1. Which of the following is the solution(s) of the radical equation below? |

**Unit 8**

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| Exponential Functions | |  |
| 1. Which of the following could be the graph of the function below?  |  |  | | --- | --- | |  |  | |  |  | |  |  | |  |  | | 1. Which of the following could be the graph of the function below?  |  |  | | --- | --- | |  |  | |  |  | |  |  | |  |  | | |

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| 1. At the beginning of January, a magazine had 4000 subscribers. The number of subscribers increased by 2% each month as compared with the previous month. How many subscribers were there at the end of the year? 2. 3140 subscribers 3. 4080 subscribers 4. 4960 subscribers 5. 5070 subscribers | 1. National Geographic reports the population of wild pandas is decreasing at a rate of 5% each year. As of 2014, researchers estimate there are about 2,000 pandas left in the wild. Find the number of wild pandas that will remain in 2020, if nothing is done to aid the bears. |

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| Compound Interest | |  |
| 1. You use your credit card to purchase $2000 in new bedroom furniture for your first apartment. The interest rate on your credit card is 11.5% ***compounded monthly***. How much money will you owe after 2 years? 2. $2,038.52 3. $2,486.45 4. $2,514.44 5. $6,149.96 | 1. You use your credit card to purchase $4500 in new bedroom furniture for your first apartment. The interest rate on your credit card is 14.99% ***compounded monthly***. How much money will you owe after 3 years? | |

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| Continuous Compound | |  |
| 1. A stock valued at $5,000 is ***compounded continuously*** at a rate of 3.4%. How much is the stock worth after 50 years? 2. $27,369.74 3. $26,607.06 4. $27,304.02 5. $35,467.08 | 1. A stock valued at $3,000 is ***compounded continuously*** at a rate of 4.5%. How much is the stock worth after 25 years? | |