**Instructions:**

* Use the green side of your scantron. Put your matric under student ID.
* No computers. No talking.
* Show all work. Zero credit for no work shown.
* Each of these questions will be on the final
* Put this paper in the **second section** of your binder
* Solutions to this test will be on wolfemath
* When you’re done, open your computer, take out your notes, and work on wolfemath

**#17: Simplifying expressions using exponents**

|  |  |
| --- | --- |
| #1 Simplify   1. None of the above | Show your work: |
| Correct solution: |

|  |  |
| --- | --- |
| #2 Simplify | Show your work: |
| Correct solution: |

|  |  |
| --- | --- |
| #3 Simplify   1. None of the above | Show your work: |
| Correct solution: |

|  |  |
| --- | --- |
| #4 Simplify   1. None of the above | Show your work: |
| Correct solution: |

|  |  |
| --- | --- |
| What is ?  What is ?  #5 Simplify the following expression:     1. None of the above | Show your work: |
| Correct solution: |
| A square courtyard has four sides of length  (9x + 1).  #6 What is the area of the courtyard?   1. None of the above   #7 What is the perimeter of the courtyard?   1. None of the above | Show your work: |
| Correct solution: |

|  |  |
| --- | --- |
| #8 Factor:   1. (x + 5)(x – 8) 2. (x - 5)(x + 8) 3. (x + 10)(x - 4) 4. (x + 5)(x + 8) 5. None of the above | Show your work: |
| Correct solution: |
| #9 Factor:   1. (x - 10)(x – 1) 2. (x + 7)(x + 10) 3. (x + 5)(x + 2) 4. (x - 5)(x - 2) 5. None of the above | Show your work: |
| Correct solution: |
| #10 The graph shows a parabola of the form where ***a*** and ***c*** are non-zero constants. In this case, what must be true of the values of ***a*** and ***c***?     1. a is positive and c is negative 2. a and c are both negative 3. a is negative and c is positive 4. a and c are both positive | Show your work: |
| Correct solution: |
| #11  The graph of is a parabola with its vertex at (0,0).  Which is true about the graph of ?   1. The graph opens downward. 2. The graph is twice as wide. 3. The graph is twice as narrow. 4. The graph moves down the y-axis by 2 units 5. The graph moves up the y-axis by 2 units | Show your work: |
| Correct solution: |
| #12  The graph shown demonstrates the height of a football off the ground, in feet, as a function of time, in seconds. What was the maximum height the football reached?     1. 7 feet 2. 2 feet 3. 12 feet 4. 25 feet 5. None of the above | Show your work: |
| Correct solution: |

|  |  |
| --- | --- |
| #13) The roots are where you will always find the vertex of the quadratic.   1. True 2. False   #14) The roots are also called the solutions to the quadratic equation.   1. True 2. False   #15) From the roots, you can write the factors of the quadratic equation.   1. True 2. False   #16) The roots are also the x-intercepts of the graph of the quadratic function.   1. True 2. False | Correct Answer |

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| #17 Jeb has entered a hot dog eating contest. Based on the pattern in the table, how many hot dogs will Jeb have eaten after 60 seconds?   |  |  | | --- | --- | | Time | Hot Dogs | | 10 | 7 | | 20 | 14 | | 30 | 21 | | 40 | 28 |  1. 7 hot dogs 2. 35 hot dogs 3. 42 hot dogs 4. 49 hot dogs 5. There is no way to tell | Show your work: |
| Correct solution: |
| #18) The factored version of an equation is  What are the solutions?   1. x = 9 and x = -6 2. x = -9 and x = -6 3. x = 9 and x = 6 4. x = 9 5. None of the above | Show your work: |
| Correct solution: |