**Instructions:**

* Use the green side of your scantron. Put your matric under student ID.
* No computers. No calculators. 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 rectangular courtyard has a length of  (-9x – 1), and a width of (4x +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 + 4)(x – 3) 2. (x + 4)(x + 3) 3. (x + 12)(x + 1) 4. (x + 12)(x – 1) 5. None of the above | Show your work: |
| Correct solution: |

|  |  |
| --- | --- |
| #9 Factor:   1. (x - 4)(x – 1) 2. (x + 4)(x + 1) 3. (x + 2)(x + 3) 4. (x - 2)(x - 3) 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 ?  A.  The graph opens downward.  B.  The graph is twice as wide.  C.  The graph is twice as narrow.  D.  The graph moves down the y-axis by 2 units  E.  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?    A.  5 feet  B.  15 feet  C.  25 feet  D.  -10 feet | Show your work: |
| Correct solution: |