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

Mr. Schlansky Algebra II

***Operations with Complex Numbers***

**Multiply the following pairs of complex numbers and express in a + b*i* form**

1. (5 – 2*i*) (2 – 3*i*) 2. (-2 + 2*i*)  (8 - *i*)

3. (7 – 2*i*) (8 + 3*i*) 4. (6 – *i*)  (8 – 5*i*)

5. (-2 + 9*i*)  (6 + 8*i*) 6. (-7 + 2*i*)  (7 + 6*i*)

7. Given *i* is the imaginary unit,  in simplest form is

|  |  |
| --- | --- |
| 1) |  |
| 2) |  |
| 3) |  |
| 4) |  |

8. The expression  is equivalent to

|  |  |
| --- | --- |
| 1) |  |
| 2) |  |
| 3) |  |
| 4) |  |

9. The expression  is equivalent to

|  |  |
| --- | --- |
| 1) | 0 |
| 2) |  |
| 3) |  |
| 4) |  |

10. The expression  is equivalent to

|  |  |  |  |
| --- | --- | --- | --- |
| 1) |  | 3) |  |
| 2) |  | 4) |  |

11. Which expression is equivalent to , where *i* is the imaginary unit?

|  |  |  |  |
| --- | --- | --- | --- |
| 1) |  | 3) |  |
| 2) |  | 4) |  |

12. If *x* is a real number, express  in simplest  form.

13. Express  in  form.

14. Simplify , where *i* is the imaginary unit.

15. Write  in  form, where *y* is a real number.