Complex Numbers

Notes

$i = \_\_\_\_$ $i^2 = \_\_\_\_ = \_\_\_\_$ $i^3 = \_\_\_\_ = \_\_\_\_$ $i^4 = \_\_\_\_ = \_\_\_\_$

$i^5 = \_\_\_\_ = \_\_\_$ $i^6 = \_\_\_\_$ $i^7 = \_\_\_\_$ $i^8 = \_\_\_\_$

$i^9 = \_\_\_\_$ $i^{10} = \_\_\_\_$ $i^{11} = \_\_\_\_$ $i^{12} = \_\_\_\_$

$i^{22} = \_\_\_\_$ $i^{39} = \_\_\_\_$ $i^{64} = \_\_\_\_$ $i^{81} = \_\_\_\_$

$2(4 + 3i) =$ $3i(5 + 4i)$ $(3 + 4i)(2 + 3i)$

$(2 - 5i)(6 + i)$ $(7 - 3i)(-4 - 5i)$ $(5 + 2i)(5 - 2i)$

Simplify the following powers of i.

1) $i^{66} =$

2) $i^{92} =$

3) $i^{125} =$

4) $i^{23} =$

5) $i^{43} =$

6) $i^{802} =$

7) $i^{624} =$

8) $i^{349} =$

Intermediate Algebra Skill

Multiplying Complex Numbers

Simplify.

1) $(-4i)^3$

2) $(i)(2i)(-7i)$

3) $(3i)(-2+6i)$

4) $(-2i)^3$

5) $(6i)(-4i)$

6) $(-8i)^2$

7) $(-3+5i)(-5+7i)$

8) $(5-3i)(-8+5i)$

9) $(5+5i)(-3-7i)$

10) $(-7-4i)(-6-6i)$

11) $(-5+4i)(-2+2i)$

12) $5(-i)(-4+6i)$

13) $(1+4i)(3+6i)$

14) $(i)(6i)(4+6i)$

15) $(7i)(6i)(-3-5i)$

16) $(-2-3i)(7+7i)$

17) $(1+3i)(-4-7i)(6-5i)$

18) $(7+3i)(-7+5i)(-8-4i)$

19) $(2-6i)(7+7i)(3+3i)$

20) $(-4i)(-8-8i)(1-8i)$