

Name: _____

Imaginary and Complex Numbers

Exercise 1: Simplify and calculate. Verify each step.

1) i^{76}

2) i^{16}

3) i^{23}

4) i^{17}

5) i^9

6) i^{51}

7) i^{32}

8) i^{102}

9) $(-i)^{28}$

10) $(-i)^{21}$

11) i^{1232}

12) i^{1221}

13) i^{706}

14) i^{215}

15) i^{312}

16) i^{702}

17) $\sqrt{7}i^{54}$

18) $\sqrt{43}i^{18}$

19) $\sqrt{122}i^{13}$

20) $\sqrt{800}i^{30}$

21) $\sqrt{72}i^{72}$

22) $\sqrt{200}i^{27}$

Exercise 2: Identify the real part and the imaginary part.

1) $z = \frac{1}{2} + \frac{3}{4}i$

2) $z = -\sqrt{2} + \sqrt{5}i$

3) $z = 2\sqrt{2} + i$

4) $z = \frac{\sqrt{2}}{3} + \frac{1}{2}i$

5) $z = 5 + i$

6) $z = -1 - i$

7) $z = 4 + 2i$

8) $z = \sqrt{2}$

9) $z = i - 3$

10) $z = -i$

11) $z = 2 + i$

12) $z = 4 + i$

13) $z = -2 - i$

14) $z = 4\sqrt{2} + \frac{1}{3}i$

15) $z = 1 + i$

16) $z = \sqrt{2}i$