

Name: \_\_\_\_\_

1.5 Complex Numbers Practice

Part 1

Period \_\_\_\_\_

Simplify.

1. \_\_\_\_\_  $(-\sqrt{-5})(4\sqrt{-8})$

2. \_\_\_\_\_  $\sqrt{-18} - \sqrt{-200} + \sqrt{-49}$

3. \_\_\_\_\_  $\frac{2}{7i}$

4. \_\_\_\_\_  $\frac{1+i}{1-2i}$

5. \_\_\_\_\_  $(5-i)^2 - (5-i^2)$

6. \_\_\_\_\_  $\frac{45}{3\sqrt{-3}}$

7. \_\_\_\_\_  $i^{-15}$

8. \_\_\_\_\_  $\frac{3+i\sqrt{4}}{7-\sqrt{-3}}$

9. \_\_\_\_\_  $(\sqrt{5}+8i\sqrt{2})(4\sqrt{3}-i\sqrt{2})$

10. \_\_\_\_\_  $(9+i)(5-3i)$

11. \_\_\_\_\_  $(-11+8i)-(-4-8i)$

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12. \_\_\_\_\_  $\frac{i-6}{i}$

13. \_\_\_\_\_  $(-2i)(-8i^5)(2i)$

14. \_\_\_\_\_  $i^{18} + i^{17} + i^{16}$

15. \_\_\_\_\_  $\frac{5}{i+2} + \frac{1}{i}$

16. \_\_\_\_\_  $(2+3\sqrt{-3})^2$

17. \_\_\_\_\_  $\frac{(i^8)^2 i}{i^5 (i^2)^6}$

18. \_\_\_\_\_  $\left(\frac{1}{3} + \frac{2i\sqrt{3}}{3}\right)^2$

19. \_\_\_\_\_  $\sqrt{-6}(2\sqrt{3} - \sqrt{-10})$

20. Simplify if needed. Write in Complex Form, identify a and b.

A.  $(5+i)^2$

B. -8

21. Identify as most restrictive classification: complex, imaginary, rational, irrational or integer.

A.  $i\sqrt{-14}$

B.  $i^{23}$

C.  $\sqrt{-10}$

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1.5 Complex Numbers Practice (Part 2)

Simplify.

1. \_\_\_\_\_  $(\sqrt{-45})(\sqrt{-20})$

2. \_\_\_\_\_  $(-3 + 4i) + (5 - i)$

3. \_\_\_\_\_  $(4 - 6i)(3 + 8i)$

4. \_\_\_\_\_  $2i\sqrt{3} - \sqrt{-75}$

5. \_\_\_\_\_  $(7 - 3i) - (-2 + 5i)$

6. \_\_\_\_\_  $\frac{6+i}{3-2i}$

7. \_\_\_\_\_  $(3 + 2i)^2 (3 - 2i)^2 i^{48}$

8. \_\_\_\_\_  $\frac{15}{2-i}$

9. \_\_\_\_\_  $\sqrt{-25} + \sqrt{-49} + \sqrt{200}$

10. \_\_\_\_\_  $(-3\sqrt{-6})(2\sqrt{-8})$

11. \_\_\_\_\_  $\frac{4}{3i}$

12. \_\_\_\_\_  $i^{-53}$

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13. \_\_\_\_\_  $\frac{3+i\sqrt{3}}{2-\sqrt{-3}}$

14. \_\_\_\_\_  $(5\sqrt{-2})^3$

15. \_\_\_\_\_  $(7i)(-2)(3i^8)$

16. \_\_\_\_\_  $i^{24} + i^{33} + i^{47}$

17. \_\_\_\_\_  $\frac{2}{i+2} + \frac{1}{i}$

18. \_\_\_\_\_  $\frac{(i^4)^3 i^2}{i^9 (i^3)^6}$

19. \_\_\_\_\_  $\sqrt[3]{-8}(2\sqrt{3} - \sqrt{-16})$

20. Simplify if needed. Write in Complex Form, identify a and b.

A.  $\frac{2+4i}{1+2i}$

B.  $-3+\sqrt{7}$

21. Identify as most restrictive classification: complex, imaginary, rational, irrational or integer.

A.  $i^{48}$

B.  $\sqrt{-27}$

C.  $i\sqrt{-6}$