

EXTRA PRACTICE — Exercises

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Unit VII – Relations of Rational Number Degree Part E – The Complex Numbers as a Mathematical System **Lesson 1 – Imaginary and Complex Numbers**

Simplify each of the following and write your result in the standard form of a complex number.

1. $\sqrt{-64}$

2. $-\sqrt{-36}$

3. $\sqrt{\frac{-2}{5}}$

4. $\sqrt{-49} + 7$

5. $\sqrt{-343} + \sqrt{-28}$

6. $-\sqrt{-14}$

7. $\frac{-3\sqrt{-98}}{\sqrt{-27}}$

8. $\frac{\sqrt{3}}{\sqrt{-7}}$

9. $\sqrt{49} - \sqrt{225}$

10. $-5\sqrt{-16}$

11. $\sqrt{-72} + \sqrt{60}$

12. $\sqrt{54} + \sqrt{-36}$

13. $\frac{14 - \sqrt{-300}}{2}$

14. $\sqrt{\frac{-5}{16}}$

15. $10\sqrt{-80}$

16. $-4\sqrt{-40}$

17. $\sqrt{-11} + 3\sqrt{11}$

18. $-9 - \sqrt{-81}$

19. $-3\sqrt{-98}$

20. $\frac{-2 - \sqrt{-68}}{2}$

EXTRA PRACTICE — Answer Key

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Unit VII – Relations of Rational Number Degree Part E – The Complex Numbers as a Mathematical System **Lesson 1 – Imaginary and Complex Numbers**

Simplify each of the following and write your result in the standard form of a complex number.

1. $0 + 8i$

2. $0 - 6i$

3. $0 + \frac{i\sqrt{10}}{5}$

4. $7 + 7i$

5. $0 + (9\sqrt{3} + 2\sqrt{7})i$

6. $0 - i\sqrt{14}$

7. $\frac{-7\sqrt{6}}{3} + 0i$

8. $0 - \frac{i\sqrt{21}}{7}$

9. $-8 + 0i$

10. $0 - 20i$

11. $2\sqrt{15} + 6i\sqrt{2}$

12. $3\sqrt{6} + 6i$

13. $7 - 5i\sqrt{3}$

14. $0 + \frac{1}{4}i\sqrt{5}$

15. $0 + 40i\sqrt{5}$

16. $0 - 8i\sqrt{10}$

17. $\sqrt{11}(3 + i)$

18. $-9 - 2i\sqrt{17}$

19. $0 - 21i\sqrt{2}$

20. $-1 - i\sqrt{17}$