EXTRA PRACTICE — Exercises

Unit VII – Relations of Rational Number Degree
Part E – The Complex Numbers as a Mathematical System
Lesson 4 – Division

For each of the following, perform the indicated division by rationalizing the denominator, simplifying your result and writing it in the standard form of a complex number.

1. $(2-7i)\div(5+2i)$

2. $(3+i)\div(4-i)$

3. $10\div(4-3i)$

4. $(3-6i)\div\left(^{-}2-5i\right)$

5. $(4+3i)\div(3-4i)$

6. $29\div i$

7. $1\div\left(3-i\sqrt{2}\right)$

8. $(3-5i)\div 4i$

9. $(1+i)\div(1-i)$

10. $8i\div(1+3i)$

11. $5\div 4i$

12. $4i\div(3-4i)$

13. $\left(1-\sqrt{^{-}5}\right)\div(2+4i)$

14. $7\div\left(^{-}2i\right)$

15. $(3+i)^{-1}$

16. $\left(3+\sqrt{^{-}16}\right)\div(2-6i)$

17. $6i\div 5i$

18. $4\sqrt{3}\div\left(2\sqrt{3}+i\sqrt{3}\right)$

19 $(17-2i)\div\left(^{-}17+3i\right)$

20. $(1-2i)\div\left(^{-}2-6i\right)$

EXTRA PRACTICE — Answer Key

Unit VII – Relations of Rational Number Degree
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For each of the following, perform the indicated division by rationalizing the denominator, simplifying your result and writing it in the standard form of a complex number.

1. $\frac{-4}{29} - \frac{39}{29}i$

2. $\frac{11}{17} + \frac{7}{17}i$

3. $\frac{8}{5} + \frac{6}{5}i$

4. $\frac{24}{29} + \frac{27}{29}i$

5. $0 - i$

6. $0 - 29i$

7. $\frac{3}{11} + \frac{\sqrt{2}}{11}i$

8. $\frac{5}{-4} + \frac{3}{-4}i$

9. $0 + i$

10. $\frac{12}{5} + \frac{4}{5}i$

11. $0 + \frac{-5}{4}i$

12. $-\frac{16}{25} + \frac{12}{25}i$

13. $\frac{1 - 2\sqrt{5}}{10} - \frac{2\left(1 + \sqrt{5}\right)}{10}i$

14. $0 + \frac{7}{2}i$

15. $\frac{3}{10} - \frac{1}{10}i$

16. $-\frac{9}{20} + \frac{13}{20}i$

17. $\frac{6}{5} + 0 \cdot i$

18. $\frac{8}{5} + \frac{4}{5}i$

19. $\frac{-295}{298} - \frac{17}{298}i$

20. $\frac{1}{4} + \frac{1}{4}i$