

Algebra II
Ch. 9 Review

Name _____

Date _____

Complete this review WITHOUT a calculator, and show all work!

Simplify.

1. $a \cdot a \cdot b^3 \cdot a^2 \cdot b^5$

2. $-(x^2)^4(-x^3)^2$

3. $[(n^4)^3]^2$

4. $\frac{2^2}{2^6}$

5. $\frac{xy^8z^2}{x^2y^9z}$

6. $\left(-\frac{3w}{4z^4}\right)^3$

7. $\frac{(w^2z^4)^3}{(-wz^5)^2(w^4z^2)}$

8. $y^a y^{3a}$

Rewrite using only positive exponents.

9. $\frac{3^{-5}}{3^{-3}}$

10. $(-3u^{-5}w^0)(5u^5w^{-6})$

11. $\frac{10ab^{-7}c^{-2}}{15a^{-2}b^0c^{-3}}$

12. $\frac{(c^2d)^{-2}}{(2^{-1}cd^{-3})^4}$

Simplify, using scientific notation.

13. $(8 \times 10^{12})(5 \times 10^{13})$

14. $\frac{5.6 \times 10^{-8}}{8 \times 10^3}$

15. Write 0.0208 in scientific notation.

16. Write 8×10^{-5} in standard decimal notation.

Simplify.

17. $(-6a^3b)(-a^2b^4)^3(9b^2)$

18. $(-\frac{3}{2}a^3h^4)^3$

19. $\frac{1.8m^2p^3}{-0.3mp^4}$

20. $(7w^2z + 15z) + (w^2z - 5wz - 16z)$

21. $(-5x^3 - 4x^2y^2 + 11y^3) - (10x^3 + 3x^2y^2 - 3y^3)$

22. $mn(-5m^2 - 3mn)$

23. $-x^2y^2z(x - xy + z)$

24. $(5r^2 - 3rt + t^2 - 4r^2t)(6r^2t^2)$

25. $(q + 30)(q - 6)$

26. $(-y - 11)(y + 2)$

27. $(2r - 5)(r - 10)$

28. $(4r - 3p^4)(r - 4p^4)$

29. $(10 - w)^2$

30. $(3w + 2)^2$

31. $(x - 5)(x + 5)$

32. $(2x + 9)(2x - 9)$

33. $(8r^2x^5 + 3y^6)(8r^2x^5 - 3y^6)$

34. $(a - 2)(a^2 + 3a - 8)$

35. $(m - r - 2)(m - r)$

36. $(5c^2 + 2c - 1)(c^2 + 3c + 7)$

37. $(x - 3)(x^2 + 3x + 9)$

38. The length and width of a rectangle are $3a - b$ and $a - 3b$. What is the area and perimeter?

39. The perimeter of a rectangle is $8k + 12$ and the length is $4k - 1$. What is the width?

40. Give the degree of the polynomial $5x^3y - xy^5$.

Answer List

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|-----------------------------|--------------------------------------|--|
| 1. a^4b^8 | 2. $-x^{14}$ | 3. n^{24} |
| 4. $\frac{1}{16}$ | 5. $\frac{z}{xy}$ | 6. $-\frac{27w^3}{64z^{12}}$ |
| 7. 1 | 8. y^{4a} | 9. $\frac{1}{9}$ |
| 10. $-\frac{15}{w^6}$ | 11. $\frac{2a^3c}{3b^r}$ | 12. $\frac{16d^{10}}{c^8}$ |
| 13. 4×10^{26} | 14. 7×10^{-6} | 15. 2.08×10^{-2} |
| 16. 0.00008 | 17. $54a^9b^{15}$ | 18. $-\frac{27}{8}a^9h^{12}$ |
| 19. $-\frac{6m}{p}$ | 20. $8w^2z - 5wz - z$ | 21. $-15c^3 - 7x^2y^2 + 14y^3$ |
| 22. $-5m^3n - 3m^2n^2$ | 23. $-x^3y^2z + x^3y^3z - x^2y^2z^2$ | 24. $30r^4t^2 - 18r^3t^3 + 6r^2t^4 - 24r^4t^3$ |
| 25. $q^2 + 24q - 180$ | 26. $-y^2 - 13y - 22$ | 27. $2r^2 - 25r + 50$ |
| 28. $4r^2 - 19p^4r + 12p^8$ | 29. $100 - 20w + w^2$ | 30. $9w^2 + 12w + 4$ |
| 31. $x^2 - 25$ | 32. $4x^2 - 81$ | 33. $64r^4x^{10} - 9y^{12}$ |
| 34. $a^3 + a^2 - 14a + 16$ | 35. $m^2 - 2mr - 2m + r^2 + 2r$ | 36. $5c^4 + 17c^3 + 40c^2 + 11c - 7$ |
| 37. $x^3 - 27$ | 38. $3a^2 - 10ab + 3b^2; 8a - 8b$ | 39. 7 |
| 40. 5 | | |

Catalog List

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|----------------|----------------|----------------|
| 1. ALG BB 56 | 2. ALG BC 43 | 3. ALG BC 95 |
| 4. ALG BD 14 | 5. ALG BD 67 | 6. ALG BE 19 |
| 7. ALG BE 64 | 8. ALG BF 6 | 9. ALG BG 58 |
| 10. ALG BG 104 | 11. ALG BG 154 | 12. ALG BG 167 |
| 13. ALG BJ 21 | 14. ALG BJ 76 | 15. ALG BK 7 |
| 16. ALG BK 15 | 17. ALG DK 104 | 18. ALG DK 117 |
| 19. ALG DL 115 | 20. ALG EA 28 | 21. ALG EB 57 |
| 22. ALG EC 23 | 23. ALG EC 59 | 24. ALG EC 93 |
| 25. ALG ED 34 | 26. ALG ED 89 | 27. ALG ED 119 |
| 28. ALG ED 164 | 29. ALG EE 30 | 30. ALG EE 41 |
| 31. ALG EF 2 | 32. ALG EF 19 | 33. ALG EF 58 |
| 34. ALG EG 18 | 35. ALG EG 39 | 36. ALG EG 65 |
| 37. ALG EG 134 | 38. ALG EK 11 | 39. ALG EK 14 |
| 40. ALG EL 5 | | |