

CHAPTER 4

NAME _____

TEST FORM A

CLASS _____ SCORE _____ GRADE _____

Simplify.

1. $x \cdot x^5 \cdot x^9$

2. $\frac{4^8}{4^6}$

3. $\frac{(4n)^5}{(4n)^5}$

4. $(x^5)^3$

5. $(-3x^2)^4$

6. $(-3xy^2)(-2x^3y^4)^2$

7. $\frac{30a^4b^6}{25a^3b^2}$

8. $\left(\frac{5m}{3n^4}\right)^3$

Divide.

9. Express using a positive exponent: 3^{-3} .

10. Express using a negative exponent: $\frac{1}{t^9}$.

Simplify.

11. $x^{-4} \cdot x^{-6}$

12. $\frac{15x^{-7}y^4}{25x^5y^{-2}}$

13. $(3x^4y^{-2})^{-3}$

14. $\left(\frac{2x^2}{y}\right)^{-3}$

15. Convert to scientific notation: 9,408,000,000,000.

16. Convert to decimal notation: 6.12×10^{-8} .

ANSWERS

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

13. _____

14. _____

15. _____

16. _____

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ANSWERS	
	Multiply or divide and write scientific notation for the result.
17. _____	17. $\frac{2.4 \times 10^6}{1.5 \times 10^8}$ 18. $(4.5 \times 10^{-13})(7.2 \times 10^{-2})$
18. _____	19. Classify $3x^2y^2 - 5y$ as a monomial, a binomial, a trinomial, or a polynomial with no special name.
19. _____	
20. _____	20. Identify the coefficient of each term of the polynomial: $4x^3 - 3x^2 + 7$.
21. _____	21. Determine the degree of each term, the leading term and the leading coefficient, and the degree of the polynomial: $2y^2 + 3y^8 + 6 - y^4$.
22. _____	22. Evaluate $-2x^2 + 6x - 5$ for $x = -2$.
	Combine like terms and write in descending order.
23. _____	23. $a^2 - 9a + \frac{2}{3}a - 6a^2$
24. _____	24. $3 - x - 4x + 6x^2 - 9x + 3x^2 + 7x$

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Add or subtract, as indicated.

25. $(7x^5 - 4x^4 + 3x + 5) + (-3x^4 - 3x^3 + x^2 - 6x)$

25. _____

26. $\left(2t^4 + \frac{3}{4}t - 3\right) + \left(4t^4 + 6t^3 + \frac{1}{4}t\right)$

26. _____

27. $(6a^4 + 2a^3 - 3a^2 + 5a - 2) - (4a^4 + a^3 + 6a - 11)$

27. _____

28. _____

28. $(2x^4 - 3.1x^2 + 4.2x + 7) - (x^5 - 7.3x^3 - 3.1x^2 - 13)$

29. _____

Multiply.

29. $-3x^3(5x^2 + 6x - 3)$

30. _____

30. $\left(x - \frac{2}{3}\right)^2$

31. _____

31. $(2t - 3)(2t + 3)$

32. $(6a + 11)(3a - 2)$

32. _____

33. $(x^4 - 3)(x^5 + 6)$

34. $(4 - a)(7 - 5a)$

33. _____

34. _____

35. $(2x + 7)(3x^2 + 6x - 1)$

36. $(9b + 4)^2$

35. _____

37. Evaluate $4x^2y - 2y^2$ for $x = -8$ and $y = 3$.

36. _____

37. _____

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38. _____

38. Combine like terms: $6x^2y^2 - 5xy^2 + 3xy + 9xy^2 - 11xy - 8$.

39. _____

39. Subtract: $(10x^2y^2 - xy + 3y^3) - (-8x^2y^2 + 6xy - 4xy^3 - 7y^3)$.

40. _____

40. Multiply: $(7x^4 - 2y)(7x^4 + 2y)$.

41. _____

Divide.

41. $(36x^4 - 24x^3 + 18x^2) \div (3x^2)$ 42. $(12x^3 + x^2 - 9x + 5) \div (x - 2)$

42. _____

43. In 2011, the average civilian American man or woman spent 110 hours participating in sports, exercise, or recreation and 1000 hours watching television. If the trend continues, at the end of twelve years, how many more hours will this person spend watching television than participating in sports, exercise, or recreation? Write scientific notation for the answer.
(Source: www.bls.gov)

43. _____

44. _____

44. Solve: $x^2 + (x - 5)(x + 3) = 2(x - 7)^2$.

Answers for Chapter 4 Tests: FORM A

- | | |
|-------------------------------|---|
| 1. x^{15} | 23. $-5a^2 - \frac{25}{3}a$ |
| 2. 4^2 , or 16 | 24. $9x^2 - 7x + 3$ |
| 3. 1 | 25. $7x^5 - 7x^4 - 3x^3 + x^2 - 3x + 5$ |
| 4. x^{15} | 26. $6t^4 + 6t^3 + t - 3$ |
| 5. $81x^8$ | 27. $2a^4 + a^3 - 3a^2 - a + 9$ |
| 6. $-12x^7y^{10}$ | 28. $-x^5 + 2x^4 + 7.3x^3 + 4.2x + 20$ |
| 7. $\frac{6ab^4}{5}$ | 29. $-15x^5 - 18x^4 + 9x^3$ |
| 8. $\frac{125m^3}{27n^{12}}$ | 30. $x^2 - \frac{4}{3}x + \frac{4}{9}$ |
| 9. $\frac{1}{3^3}$ | 31. $4t^2 - 9$ |
| 10. t^{-9} | 32. $18a^2 + 21a - 22$ |
| 11. $\frac{1}{x^{10}}$ | 33. $x^9 - 3x^5 + 6x^4 - 18$ |
| 12. $\frac{3y^6}{5x^{12}}$ | 34. $28 - 27a + 5a^2$ |
| 13. $\frac{y^6}{27x^{12}}$ | 35. $6x^3 + 33x^2 + 40x - 7$ |
| 14. $\frac{y^3}{8x^6}$ | 36. $81b^2 + 72b + 16$ |
| 15. 9.408×10^{12} | 37. 750 |
| 16. 0.0000000612 | 38. $6x^2y^2 + 4xy^2 - 8xy - 8$ |
| 17. 1.6×10^{-2} | 39. $18x^2y^2 + 4xy^3 + 10y^3 - 7xy$ |
| 18. 3.24×10^{-14} | 40. $49x^8 - 4y^2$ |
| 19. Binomial | 41. $12x^2 - 8x + 6$ |
| 20. 4, -3, 7 | 42. $12x^2 + 25x + 41 + \frac{87}{x-2}$ |
| 21. 2, 8, 0, 4, $3y^8$, 3, 8 | 43. 1.1×10^4 hr |
| 22. -25 | 44. $\frac{113}{26}$ |

