

# ALEKS® Final Exponents & Polynomials Practice #1

Beginning Algebra / Math 100 Fall 2013 – 506 (Prof. Miller)

Student Name/ID:

**Instructor Note:**

Assignment: Set up a tutoring appointment with one of the campus tutors or with me. At that appointment, learn how to do the problems below and then work through them with the tutor. Have the tutor write and sign their name after you have completed all 40 problems. Then turn in this paper and any other pages you used to do the work. This assignment is worth 30 math dollars. Tutor (print): \_\_\_\_\_  
Tutor (sign): \_\_\_\_\_

1. Multiply.

$$(u + 7)(u - 7)$$

Simplify your answer.

2. Calculate.

$$\frac{-6 \times 10^6}{4 \times 10^{10}}$$

Write your answer in scientific notation.

3. Simplify.

$$2vx^{-2} \cdot 7v^{-1} \cdot 4u^7u^{-1}x^{-4}$$

Use only positive exponents in your answer.

4. Simplify.

$$\frac{x^5}{x^{-9}}$$

Write your answer with a positive exponent only.

5. Simplify.

$$(x^5 y)^2$$

Write your answer without parentheses.

6. Multiply.

$$(z - 6)(z + 6)$$

Simplify your answer.

7. Simplify.

$$\left(\frac{2x^{-3}u}{z^{-2}}\right)^3 (x^2 z^{-1})$$

Write your answer using only positive exponents.

8. What are the leading coefficient and degree of the polynomial?

$$-5x + 20x^3 + 1 - 8x^4$$

Leading coefficient:

Degree:

9. Rewrite without parentheses.

$$(2c^2d^4 - 4d^3)(-5c^6d)$$

Simplify your answer as much as possible.

10. Simplify.

$$(-7t^2 + 3t - 1) + (2t^2 + 4t + 5)$$

11. Rewrite without parentheses and simplify.

$$(u - 4)^2$$

12. Simplify.

$$\frac{x^{-4}}{x^{-2}}$$

Write your answer with a positive exponent only.

13. Rewrite the following without an exponent.

$$\left(\frac{5}{9}\right)^{-2}$$

14. Rewrite without parentheses and simplify.

$$(v+6)^2$$

15. Divide.

$$\frac{6x^4 - 12x^3}{2x^2}$$

Simplify your answer as much as possible.

16. Rewrite the expression without using a negative exponent.

$$4v^{-4}$$

Simplify your answer as much as possible.

17. Multiply.

$$(u + 1)(u - 5)$$

Simplify your answer.

18. Divide.

$$(-12x^5y^6 + 14xy^6) \div (-3x^2y^5)$$

Simplify your answer as much as possible.

19. Simplify.

$$(-3w^4x^{-2})^2$$

Write your answer using only positive exponents.

20. Simplify.

$$(w^5)^{-4}$$

Write your answer without using negative exponents.

21. Evaluate the expressions.

$$\left(-\frac{2}{3}\right)^0 =$$

$$-(5)^0 =$$

22. Use the distributive property to remove the parentheses.

$$9x^6(8x + 7x^2)$$

Simplify your answer as much as possible.

23. Divide.

$$\frac{16v^6 - 20v^3}{4v^3}$$

Simplify your answer as much as possible.

24. Rewrite the following without an exponent.

$$(-9)^{-2}$$

25. Multiply.

$$2y^5v^5 \cdot 4v^4 \cdot 6y$$

Simplify your answer as much as possible.

26. Simplify.

$$\left(4 a^{-6} b^5\right)^{-2}$$

Write your answer using only positive exponents.

27. Simplify.

$$\frac{x^{-6}}{x^{-7}}$$

Write your answer with a positive exponent only.

28. Calculate.

$$\frac{-4.8 \times 10^9}{-4 \times 10^{11}}$$

Write your answer in scientific notation.

29. Rewrite without parentheses.

$$\left(8 a^6 b^4 - 7 a^3\right)\left(-9 a b^5\right)$$

Simplify your answer as much as possible.

30. Simplify.

$$8v^6x^{-5}y^{-4} \cdot 4xy^5 \cdot 2v^{-2}$$

Use only positive exponents in your answer.

31. Rewrite the following without an exponent.

$$(-2)^{-1}$$

32. Give the degree of the polynomial.

$$5 + 2y + vw^9 - 9w^9y^5v^4$$

33. Rewrite without parentheses and simplify.

$$(y - 4)^2$$

34. Multiply.

$$(3v + 3y - 4)(4v - y)$$

Simplify your answer.



35. Simplify.

$$(u^4)^{-5}$$

Write your answer without using negative exponents.

36. Divide.

$$\frac{18x^6 - 24x^5}{3x^2}$$

Simplify your answer as much as possible.

37. Simplify.

$$(-4y^2 + 6y - 5) + (7y^2 + y + 2)$$

38. Rewrite the following without an exponent.

$$(-7)^{-2}$$

39. Use the distributive property to remove the parentheses.

$$10y^2(9 - 7y^4)$$

Simplify your answer as much as possible.

40. Rewrite without parentheses.

$$-5b^6c(6b^4 + 3b^5c^3 - 9c^3)$$

Simplify your answer as much as possible.

41. Multiply.

$$(a+8)(a-8)$$

Simplify your answer.

42. Evaluate the expressions.

$$\left(\frac{4}{9}\right)^0 =$$

$$-(4)^0 =$$

43. Multiply.

$$(v-3)(v+4)$$

Simplify your answer.

44. Simplify.

$$7ux^{-4} \cdot 2u^{-6}v^9v^{-9} \cdot 6x^8$$

Use only positive exponents in your answer.

45. Simplify.

$$\left(\frac{3u^3v}{w^{-1}}\right)^{-3} (u^{-4}w^5)$$

Write your answer using only positive exponents.

46. Write 0.0005941 in scientific notation.

47. Calculate.

$$\frac{5.76 \times 10^5}{-2 \times 10^{12}}$$

Write your answer in scientific notation.

48. Simplify.

$$(5w^2 + 9w + 4) + (-2w^2 + 4w + 4) - (-5w^2 + 7w - 5)$$

49. Simplify.

$$(7u^2 - 6u + 9) - (9u^2 - 8u + 2) + (7u^2 + 9u + 8)$$

50. Multiply.

$$(5a - b)(5a + 8b)$$

Simplify your answer.

51. Evaluate the expressions.

$$-(2)^0 =$$

$$\left(-\frac{1}{5}\right)^0 =$$

52. Divide.

$$(12u^6z^4 - 23u^6z^2) \div (-4u^4z^3)$$

Simplify your answer as much as possible.

53. Multiply.

$$(4y - 3z)(8y - 3z)$$

Simplify your answer.

54. Simplify.

$$x \cdot x^4 \cdot x^3$$

55. Simplify.

$$\frac{y^4 x^6}{y^7 x}$$

56. Multiply.

$$(2u + 7)(5u - 3y - 2)$$

Simplify your answer.

57. Simplify.

$$\left(\frac{w^2}{-2u^4}\right)^3$$

Write your answer without parentheses.

58. Simplify.

$$\left(-x^3 z^4\right)^2 \left(2x^2 y^3 z\right)$$

59. Simplify.

$$(-7u^2 - 3u - 9) + (-5u^2 - 2u + 1) - (5u^2 - 7u - 3)$$

60. Write 659 in scientific notation.

## Final Exponents & Polynomials Practice #1 Answers for class Beginning Algebra / Math 100 Fall 2013 – 506

- $u^2 - 49$
- $-1.5 \times 10^{-4}$
- $\frac{56u^6}{x^6}$
- $x^{14}$
- $x^{10}y^2$
- $z^2 - 36$
- $\frac{8u^3z^5}{x^7}$
- Leading coefficient:  $-8$   
Degree:  $4$
- $-10c^8d^5 + 20c^6d^4$
- $-5t^2 + 7t + 4$
- $u^2 - 8u + 16$
- $\frac{1}{x^2}$
- $\frac{81}{25}$
- $v^2 + 12v + 36$
- $3x^2 - 6x$
- $\frac{4}{v^4}$
- $u^2 - 4u - 5$

18.  $4x^3y - \frac{14y}{3x}$

19.  $\frac{9w^8}{x^4}$

20.  $\frac{1}{w^{20}}$

21.  $\left(-\frac{2}{3}\right)^0 = 1$   
 $-(5)^0 = -1$

22.  $72x^7 + 63x^8$

23.  $4v^3 - 5$

24.  $\frac{1}{81}$

25.  $48y^6v^9$

26.  $\frac{a^{12}}{16b^{10}}$

27.  $x$

28.  $1.2 \times 10^{-2}$

29.  $-72a^7b^9 + 63a^4b^5$

30.  $\frac{64v^4y}{x^4}$

31.  $-\frac{1}{2}$

32. 18

33.  $y^2 - 8y + 16$

34.  $12v^2 + 9vy - 3y^2 - 16v + 4y$



$$35. \frac{1}{u^{20}}$$

$$36. 6x^4 - 8x^3$$

$$37. 3y^2 + 7y - 3$$

$$38. \frac{1}{49}$$

$$39. 90y^2 - 70y^6$$

$$40. -30b^{10}c - 15b^{11}c^4 + 45b^6c^4$$

$$41. a^2 - 64$$

$$42. \left(\frac{4}{9}\right)^0 = 1$$

$$-(4)^0 = -1$$

$$43. v^2 + v - 12$$

$$44. \frac{84x^4}{u^5}$$

$$45. \frac{w^2}{27u^{13}v^3}$$

$$46. 5.941 \times 10^{-4}$$

$$47. -2.88 \times 10^{-7}$$

$$48. 8w^2 + 6w + 13$$

$$49. 5u^2 + 11u + 15$$

$$50. 25a^2 + 35ab - 8b^2$$

$$51. -(2)^0 = -1$$

$$\left(-\frac{1}{5}\right)^0 = 1$$

52.  $-3u^2z + \frac{23u^2}{4z}$

53.  $32y^2 - 36yz + 9z^2$

54.  $x^8$

55.  $\frac{x^5}{y^3}$

56.  $10u^2 - 6uy + 31u - 21y - 14$

57.  $-\frac{w^6}{8u^{12}}$

58.  $2x^8y^3z^9$

59.  $-17u^2 + 2u - 5$

60.  $6.59 \times 10^2$