

Exponents A3**Short Answer**

1. Simplify $\left(\frac{3m^8}{m^3n^2}\right)^3$.
2. Simplify $(x^5)^{-8}x^4$.
3. Simplify $\frac{6^3}{6}$.
4. Simplify $(-3)^{-2}$.
5. Find the value of the power 10^7 .
6. Multiply.
 $9x^4y^5(-5x^3y^3 - 3y^3)$
7. Simplify 2^{-2} .
8. Subtract.
 $(8d^4 - d^3) - (d^4 + 4d^3 - 1)$
9. Subtract.
 $(4d^4 - d^3) - (d^4 + 8d^3 - 4)$
10. Simplify $(-4)^0$.
11. Subtract.
 $(7b^4 - b^3) - (b^4 + 6b^3 - 2)$
12. Simplify $\left(\frac{2r^9}{r^6s^8}\right)^3$.
13. Find the value of the power 10^8 .
14. Simplify $(-6) \cdot (-6)^2$.
15. Multiply.
 $-9x^6y^3(5x^6y - 5x^5y)$
16. Simplify $(-2)^{-3}$.
17. Simplify $m^6 \cdot y^8 \cdot m^2$.

18. Simplify $\frac{4w^0r^{-5}}{t^{-3}}$.
19. Multiply.
 $-7c^3d^5(c^4 - 4d^5)$
20. Find the value of the expression 133×10^{-3} .
21. Subtract.
 $(5e^5 - e^3) - (e^5 + 6e^3 - 2)$
22. Find the value of the power 10^{-1} .
23. Multiply.
 $(\frac{2}{3}p^4y^3)(y^4s^5)(6p^2s^3)$
24. Simplify 2^{-3} .
25. Multiply.
 $-2xy^3(3x^4y^3 + 3x^3y^2)$
26. Simplify 3^{-4} .
27. Write 10,000 as a power of 10.
28. Simplify $\left(\frac{4m^7}{m^4n^6}\right)^3$.
29. Simplify 5^{-4} .
30. Simplify $n^6 \cdot m^{10} \cdot n^9$.
31. Subtract.
 $(10d^4 - d) - (d^4 + 4d - 4)$
32. Simplify $n^{10} \cdot m \cdot n^5$.
33. Simplify $\frac{-2x^0y^{-4}}{z^{-3}}$.
34. Simplify $\left(\frac{2r^9}{r^4s^9}\right)^3$.
35. Add or subtract.
 $-10m + 2m^4 - 13m - 20m^4$
36. Simplify $\frac{6x^0y^{-7}}{z^{-5}}$.

37. Simplify $a^8 \cdot b^8 \cdot a^3$.

38. Simplify $\frac{9x^0y^{-4}}{z^{-8}}$.

39. Multiply.
 $6x^5y^2(x^3y^2 - 5xy^5)$

40. Simplify $(-2)^{-4}$.

41. Simplify $\frac{-3w^0r^{-2}}{t^{-2}}$.

42. Write 0.01 as a power of 10.

43. Simplify $a^8 \cdot b^9 \cdot a^{-3}$.

44. Simplify $a^9 \cdot b^5 \cdot a^5$.

45. Simplify $\frac{9x^0y^{-8}}{z^{-8}}$.

46. Simplify $(-3)^{-3}$.

47. Simplify 4^{-2} .

48. Simplify 5^{-2} .

49. Subtract.
 $(9a^5 - a^4) - (a^5 + 8a^4 - 4)$

50. Simplify $(m^2n^{-3})^2(-m^{-3}n^3)^3$.

51. Simplify $\left(\frac{2x^9}{x^5y^9}\right)^4$.

52. Simplify $\frac{y^6z^{12}}{(yz)^3}$.

53. Simplify $\left(\frac{2m^8}{m^2n^4}\right)^4$.

54. Find the value of the expression 107×10^3 .

55. Simplify $\frac{-7x^0y^{-2}}{z^{-3}}$.

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56. Subtract.

$$(8b^4 - b^3) - (b^4 + 4b^3 - 4)$$

57. Simplify $m^3 \cdot y^6 \cdot m^2$.

58. Simplify $\frac{-2w^0r^{-8}}{t^{-9}}$.

59. Simplify $\left(\frac{4r^5}{r^3s^3}\right)^2$.

60. Simplify $(-4)^{-4}$.

61. Simplify $\left(\frac{2}{4}\right)^{-3}$.

62. Simplify $(-4)^{-2}$.

63. Multiply.

$$8r^5s^4(-3r^5 + 2r^3s)$$

Exponents A3
Answer Section**SHORT ANSWER**

1. $\frac{27m^{15}}{n^6}$
2. $\frac{1}{x^{36}}$
3. 36
4. $\frac{1}{9}$
5. 10000000
6. $-45x^7y^8 - 27x^4y^8$
7. $\frac{1}{4}$
8. $7d^4 - 5d^3 + 1$
9. $3d^4 - 9d^3 + 4$
10. 1
11. $6b^4 - 7b^3 + 2$
12. $\frac{8r^9}{s^{24}}$
13. 100000000
14. -216
15. $-45x^{12}y^4 + 45x^{11}y^4$
16. $-\frac{1}{8}$
17. $m^8 \cdot y^8$
18. $\frac{4t^3}{r^5}$
19. $-7c^7d^5 + 28c^3d^{10}$
20. 0.133
21. $4e^5 - 7e^3 + 2$
22. 0.1
23. $4p^6y^7s^8$
24. $\frac{1}{8}$
25. $-6x^5y^6 - 6x^4y^5$
26. $\frac{1}{81}$
27. 10^4
28. $\frac{64m^9}{n^{18}}$

29. $\frac{1}{625}$
30. $n^{15} \cdot m^{10}$
31. $9d^4 - 5d + 4$
32. $n^{15} \cdot m$
33. $\frac{-2z^3}{y^4}$
34. $\frac{8r^{15}}{s^{27}}$
35. $-23m - 18m^4$
36. $\frac{6z^5}{y^7}$
37. $a^{11} \cdot b^8$
38. $\frac{9z^8}{y^4}$
39. $6x^8y^4 - 30x^6y^7$
40. $\frac{1}{16}$
41. $\frac{-3t^2}{r^2}$
42. 10^{-2}
43. $a^5 \cdot b^9$
44. $a^{14} \cdot b^5$
45. $\frac{9z^8}{y^8}$
46. $-\frac{1}{27}$
47. $\frac{1}{16}$
48. $\frac{1}{25}$
49. $8a^5 - 9a^4 + 4$
50. $-\frac{n^3}{m^5}$
51. $\frac{16x^{16}}{y^{36}}$
52. y^3z^9
53. $\frac{16m^{24}}{n^{16}}$
54. 107,000

55. $\frac{-7z^3}{y^2}$

56. $7b^4 - 5b^3 + 4$

57. $m^5 \cdot y^6$

58. $\frac{-2t^9}{r^8}$

59. $\frac{16r^4}{s^6}$

60. $\frac{1}{256}$

61. 8

62. $\frac{1}{16}$

63. $-24r^{10}s^4 + 16r^8s^5$