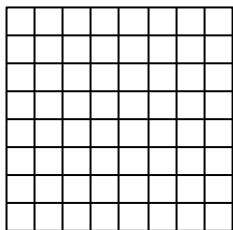


Unit 2 – Powers & Exponent Laws

Grade 9 Mathematics Exam Review

1. Write the number of unit squares in this large square as a power.



2. Write the base of $-(-7)^4$.
3. Write 9^5 as repeated multiplication.
4. Write $(-2) \times (-2) \times (-2) \times (-2) \times (-2) \times (-2)$ as a power.
5. Write $(6)(6)(6)(6)(6)(6)(6)(6)$ as a power.
6. Evaluate: 6^5
7. Evaluate: -5^8
8. Evaluate: $(-4)^3$
9. Which answer is negative?
- i) $(-7)^6$
 - ii) $-(-7)^6$
 - iii) $-(-7)^6$
10. Which power is positive?
- i) $(8)^3$
 - ii) $(-8)^3$
 - iii) $-(8)^3$
 - iv) $-(-8)^3$
11. Evaluate: 10^7

12. Write 1 000 000 as a power of 10.
13. Write one hundred million as a power of 10.
14. Evaluate: -7^0
15. Evaluate: $(-15)^0$
16. Evaluate: $-(10^0)^9$
17. Evaluate: $(-10^3)^0$
18. Write $(4 \times 10^4) + (6 \times 10^3) + (8 \times 10^2) + (5 \times 10^1) + (7 \times 10^0)$ in standard form.
19. Write $(3 \times 10^4) + (6 \times 10^1) + (7 \times 10^2) + (4 \times 10^0)$ in standard form.
20. Which number is the greatest?
- i) $(5 \times 10^3) + (6 \times 10^2) + (4 \times 10^1) + (7 \times 10^0)$
 - ii) 5645
 - iii) $(5 \times 10^3) + (7 \times 10^2) + (8 \times 10^0)$
 - iv) 5780
21. Evaluate: $4 - 6^2$
22. Evaluate: $(-3 \times 6)^2$
23. State which operation you would do first to evaluate $7 + 8 \times 5^2 - 4$.
24. Evaluate: $4^4 - 2^2$
25. Evaluate: $2^3 - (-3)^3$
26. Evaluate: $(3^3 - 2^2)^0 - (4^2 - 8^0)$
27. Evaluate: $(3 + 4)^2 - (4 - 6)^3$
28. Which is the correct value of $2^2 + 3 \times 5 - 3$?
- i) 14
 - ii) 10
 - iii) 16
 - iv) 32

29. Which expression has a value closest to 2?

i) $(-2) \times (-3) - (-3)^2 - (3 \times 2)^0$

ii) $(-5 \times 3) + 4^2 - (-2)^0$

iii) $(-2)^0 - (-2)^1 - (-2)^2$

iv) $(-3)^2 + (-3) - (-2)^2 + (-2)^0$

30. Which expression has a value of 0?

i) $-(-8)^0 + 2 \times (-6)^0 - (-5)^0$

ii) $(8 \times 6)^0 - (6 - 5)^2 + (10 - 6)^0$

iii) $6 - (5 + 5)^2 - (-10)^0$

iv) $(4 \times 5 + 10) - (6^2 - 8^2)^0 - (-8)^0$

31. Write the product of $5^4 \times 5^5$ as a single power.

32. Write the product of $(-7)^5 \times (-7)^4$ as a single power.

33. Write the quotient of $\frac{6^8}{6^4}$ as a single power.

34. Write the quotient of $(-8)^{12} \div (-8)^4$ as a single power.

35. Express $7^7 \times 7^5 \div 7^6$ as a single power.

36. Express $\frac{(-5)^9 \times (-5)^6}{(-5)^3}$ as a single power.

37. Evaluate: $(-8)^4 \div (-8)^4$

38. Evaluate: $\frac{(3)^8 \times (3)^6}{(3)^{12}}$

39. Evaluate: $(-2)^4 \times (-2)^2 \div (-2)^0$

40. Evaluate: $10^5 \times 10^2 + 10^5$

41. Write $[(-6) \times (-5)]^7$ as a product of powers.

42. Write $\left(\frac{5}{3}\right)^5$ as a quotient of powers.

43. Write $-\left(7^2\right)^3$ as a power.

44. Write $\left[(-5) \times 3\right]^5$ as a product of powers.

45. Write $\left(\frac{5}{3}\right)^5$ as a quotient of powers.

46. Evaluate: $\left[(-4) \times (5)\right]^3$

47. Evaluate: $\left[(-2)^0\right]^4$

48. Simplify, then evaluate.

$$\left(2^4 \times 2^3\right)^3$$

49. Which expressions have positive values?

i) $\left[(-5)^6\right]^7$

ii) $\left[-(-5)^6\right]^7$

iii) $-\left(5^6\right)^7$

iv) $-\left[-(-5)^6\right]^7$

50. Which expressions have negative values?

i) $\left[-(-4)^6\right]^6$

ii) $\left(-4^6\right)^6$

iii) $\left[(-4)^6\right]^6$

iv) $-\left[(-4)^6\right]^6$

Unit 2 - Answer Key

1. 8^2
2. -7
3. $9 \times 9 \times 9 \times 9 \times 9$
4. $(-2)^6$
5. 6^8
6. 7776
7. -390 625
8. -64
9. ii and iii
10. i and iv
11. 10 000 000
12. 10^6
13. 10^8
14. -1
15. 1
16. -1
17. 1
18. 46 857
19. 30 764
20. iv
21. -32
22. 324
23. Square 5
24. 252
25. 35
26. -14
27. 57
28. iii
29. iv
30. i and iv
31. 5^9
32. $(-7)^9$
33. 6^4
34. $(-8)^8$
35. 7^6
36. $(-5)^{12}$
37. 1
38. 9
39. 64
40. 10 100 000
41. $(-6)^7 \times (-5)^7$
42. ANS:
 $\frac{5^5}{3^5}$
43. -7^6
44. $(-5)^5 \times 3^5$
45. $\frac{5^5}{3^5}$
46. -8000
47. 1
48. 2 097 152
49. i and iv
50. iv