

Laws of Integer Exponents Made Simple

Grade 8 math · Test · Standards: 8.EE.A.1

Name: _____ Date: _____ Class: _____

This test has 8 questions worth 20 points in total and should take about 45 minutes. Show every step and name the rule you use. Calculators are not needed; write fractions in lowest terms.

Standards: 8.EE.A.1 · **Level:** Grade 8

Time: 45 minutes · 8 questions · Total: 20 points · Calculator: as allowed by your teacher

Question 1 Evaluate powers (3 points)

Evaluate each expression. (1 point each)

- a. 6^0
- b. 3^{-4}
- c. $(-2)^5$

Question 2 One power (3 points)

Write each as a single power. (1 point each)

- a. $7^6 \cdot 7^{-2}$
- b. $\frac{11^4}{11^9}$
- c. $(5^{-2})^3$

Question 3 Positive exponents (2 points)

Simplify $(2a^{-2})^3$ and write the result with positive exponents.

Question 4 Table of powers of 4 (3 points)

Complete the three missing values in the table. (1 point each)

4^3	4^2	4^1	4^0	4^{-1}	4^{-2}

Question 5 Several rules at once (3 points)

Evaluate $2^{-5} \cdot 2^8 \div 2^{-2}$. Show each step.

Question 6 Dev's work (2 points)

Dev says $(3^2)^4 = 3^6$. Find his mistake and give the correct value.

Question 7 Views multiply (2 points)

On day 3, a skate video had 10^3 views. On day 7 it had 10^7 views. How many times as many views did it have on day 7? Write a power of 10 and the number.

Question 8 Reading a picture (2 points)

Each box shows 2^2 . Write the picture as a power of a power, then as a single power and evaluate it.



Three boxes.