

Grade 8 - Properties of Integer Exponents - Test

Common Core 8.EE.A.1 · maths-pdf.fr/en/

Name: _____ Class: _____ Date: ____/____/____

This 20-point test checks the properties of integer exponents, including zero and negative exponents (Common Core 8.EE.A.1). Work alone, show every step, and write each final answer clearly. You have 45 minutes. Calculators are not needed unless a question says so.

About this test

- Grade: Grade 8
- Chapter: Properties of Integer Exponents
- Standards: 8.EE.A.1
- Time: 45 minutes
- Total: 20 points

Question 1 - Use the rules [4 pts]

- Simplify $5^2 \cdot 5^4$. (1 point)
- Simplify $\frac{7^8}{7^5}$ and evaluate. (1 point)
- Simplify $(3^2)^3$. (1 point)
- Evaluate 9^0 . (1 point)

Question 2 - Negative exponents [3 pts]

2^3	2^2	2^1	2^0	2^{-1}	2^{-2}
8	4	2	1	?	?
$\div 2$	$\div 2$	$\div 2$	$\div 2$	$\div 2$	

Each step to the right divides by 2, so the exponent drops by 1.

- Write 2^{-1} and 2^{-2} as fractions. (2 points)
- Evaluate 10^{-2} as a decimal. (1 point)

Question 3 - Expand and count [2 pts]

$$\begin{array}{c} \textcircled{5} \quad \textcircled{5} \quad \textcircled{5} \quad \textcircled{5} \quad \textcircled{5} \\ \underbrace{\hspace{1.5cm}} \quad \underbrace{\hspace{1.5cm}} \\ 5^2: 2 \text{ factors} \quad 5^3: 3 \text{ factors} \\ \textbf{Together: 5 factors, so } 5^5 \\ 5^2 \times 5^3 = 5^5 \end{array}$$

Write the product shown as a single power and evaluate it.

Question 4 - Fractions [2 pts]

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

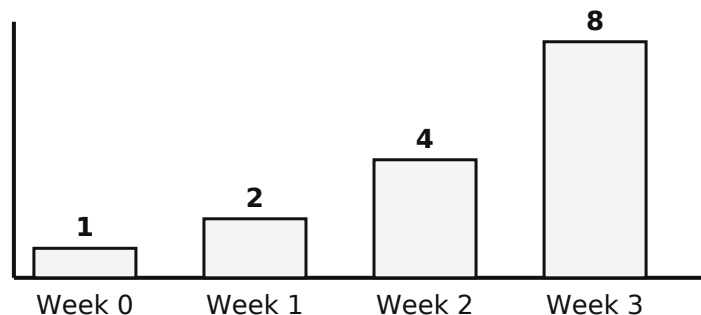
Question 5 - Multi-step [3 pts]

Simplify and write with positive exponents: $\frac{3^{-2} \cdot 3^7}{3^2}$. Then evaluate.

Question 6 - Find the exponent [2 pts]

Find n : $\frac{4^n}{4^3} = 4^{-2}$.

Question 7 - Doubling [2 pts]



Followers double every week.

Mei's video channel starts with 1 thousand followers, and the number doubles every week. Write the number of thousands after w weeks as a power. How many thousand followers are

there after 8 weeks?

Question 8 - Explain [2 pts]

Liam says $5^{-2} = -10$. Explain his mistake and give the correct value.