

Grade 8 - Properties of Integer Exponents - Quiz

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

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

Pick the best answer for each of the 10 questions about the properties of integer exponents, including zero and negative exponents (Common Core 8.EE.A.1). Read each question carefully, then read the explanation to learn from any mistake.

Grade 8 · Common Core State Standards: **8.EE.A.1**

Questions

Question 1

Which expression equals $7^4 \cdot 7^{-1}$?

- A. 7^5
- B. 7^3
- C. 7^{-4}
- D. 7^{-3}

Question 2

What is the value of 5^{-2} ?

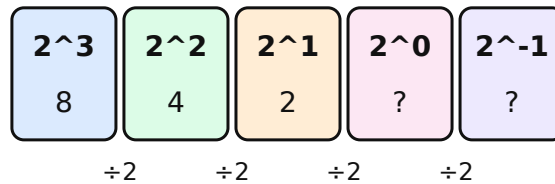
- A. $\frac{1}{25}$
- B. -25
- C. -10
- D. $\frac{1}{10}$

Question 3

Simplify $\frac{6^9}{6^3}$.

- A. 6^3
- B. 6^6
- C. 6^{12}
- D. 1^6

Question 4



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

What are the missing values in the pattern?

- A. 0 and -1
- B. 1 and $-\frac{1}{2}$
- C. 1 and $\frac{1}{2}$
- D. 0 and $\frac{1}{2}$

Question 5

What is $(4^2)^3$?

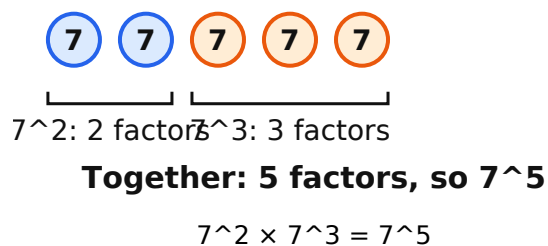
- A. 4^5
- B. 4^8
- C. 12^6
- D. 4^6

Question 6

Which equals $(\frac{1}{3})^{-2}$?

- A. $\frac{1}{9}$
- B. -9
- C. $-\frac{2}{3}$
- D. 9

Question 7



Which expression matches the picture?

- A. 7^6

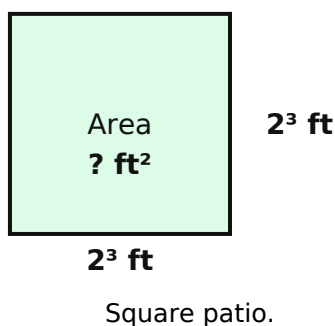
- B. 14^5
- C. 7^5
- D. 7^1

Question 8

Solve $3^n \cdot 3^4 = 3^1$.

- A. $n = -3$
- B. $n = 3$
- C. $n = 5$
- D. $n = -5$

Question 9



What is the area of this square written as a power of 2?

- A. 2^6
- B. 2^5
- C. 2^9
- D. 2^8

Question 10

Which is NOT equal to 1?

- A. 9^0
- B. 0^1
- C. $(-4)^0$
- D. 1^{-5}

Answers

1. **B** - Add the exponents: $4 + (-1) = 3$. Subtracting in the wrong order gives 7^{-3} , and 7^5 comes from changing the sign of the second exponent.
2. **A** - $5^{-2} = \frac{1}{5^2}$. A negative exponent is a reciprocal, not a negative number.
3. **B** - Subtract the exponents: $9 - 3 = 6$. Dividing the bases gives the wrong 1.
4. **C** - Each step to the right divides by 2: 2, then 1, then one half.
5. **D** - Power of a power: multiply the exponents, $2 \times 3 = 6$. Adding gives the wrong 5.
6. **D** - Flip the base and use a positive exponent: $3^2 = 9$.
7. **C** - Five sevens multiplied together is 7^5 . Multiplying 2×3 gives the wrong 6.
8. **A** - Add exponents: $n + 4 = 1$, so $n = -3$.
9. **A** - Area = $(2^3)^2 = 2^6 = 64$ square feet.
10. **B** - $0^1 = 0$. The others all equal 1: any nonzero base to the zero power, and 1 to any power.

Remember

- Product rule: $a^m \cdot a^n = a^{m+n}$.
- Quotient rule: $\frac{a^m}{a^n} = a^{m-n}$.
- Power rule: $(a^m)^n = a^{mn}$.
- $a^0 = 1$ and $a^{-n} = \frac{1}{a^n}$ for nonzero a .
- A negative exponent does not make the number negative: $2^{-3} = \frac{1}{8}$.