

1. $2^3(2^1) = 2^4$

2. $a^3(a^1) =$

3. $2^a(2^b) =$

4. Do either part A or B for this question (but not both). The point of this question is to check your conceptual understanding of these "rules."

A) Your neighbor Tim is a smart 4th grader. He knows about multiplication and some about division. His math skills and math vocabulary are much more limited than yours. Explain to Tim what $x^a(x^b)$ is equivalent to **and why**.

B) Explain what $x^a(x^b)$ is equivalent to **and why** using only pictures and symbols, no words/explanations allowed

5. $(2^3)^2 =$

6. $(a^3)^2 =$

7. $(a^b)^2 =$

8. Do either part A or B for this question (but not both). The point of this question is to check your conceptual understanding of these "rules."

A) Your neighbor Tim is a smart 4th grader. He knows about multiplication and some about division. His math skills and math vocabulary are much more limited than yours. Explain to Tim what $(a^b)^c$ is equivalent to **and why**.

B) Explain what $(x^a)^b$ is equivalent to **and why** using only pictures and symbols, no words/explanations allowed

9. $\frac{2^4}{2^3} = 2^1$ and $\frac{2^2}{2^5} = \frac{1}{2^3} = 2^{-3}$

10. $\frac{a^4}{a^3} =$

11. $\frac{a^2}{a^5} =$

12. If $a > b$, $\frac{2^a}{2^b} =$

13. If $a < b$, $\frac{2^a}{2^b} =$

14. If $a = b$, $\frac{2^a}{2^b} =$

15. If $a > b$, $\frac{x^a}{x^b} =$

16. If $a < b$, $\frac{x^a}{x^b} =$

17. If $a = b$, and $x \neq 0$, $\frac{x^a}{x^b} =$

18. Do either part A or B for this question (but not both). The point of this question is to check your conceptual understanding of these "rules."

A) Your neighbor Tim is a smart 4th grader. He knows about multiplication and some about division. His math skills and math vocabulary are much more limited than yours. Explain to Tim what $\frac{x^a}{x^b}$ is equivalent to **and why**.

B) Explain what $\frac{x^a}{x^b}$ is equivalent to **and why** using only pictures and symbols, no words/explanations allowed