

Skill check :

$$\textcircled{1} \quad 2^4 \cdot 2^5 - (2^2)^2$$

Get out math folder

Math Composition notebook

Planner

Khan goal sheet/notebook

**10-3
Quotient of powers
property**

Vocabulary:

**1.) Quotient of
powers property**

**To divide powers with the same
base, subtract their exponents.**

ex.)
$$\frac{4^5}{4^2} = 4^{5-2} = 4^3$$

**Example 1:
Dividing powers
with the same base**

$$\textcircled{1} \frac{2^6}{2^4}$$

$$\textcircled{2} \frac{(-7)^9}{(-7)^3}$$

$$\textcircled{3} \frac{h^7}{h^6}$$

**Example 2
Simplifying the
expression**

$$\frac{3^4 \cdot 3^2}{3^3}$$

**Example 3:
Simplifying the
expression**

$$\frac{a^{10}}{a^6} \cdot \frac{a^7}{a^4}$$

Practice:

$$\textcircled{1} \frac{2^{15}}{2^3 \cdot 2^5}$$

$$\textcircled{2} \frac{d^5 \cdot d^9}{d \cdot d^8}$$

$$\textcircled{3} \frac{a^3 \cdot b^4 \cdot 5^4}{b^2 \cdot 5}$$

$$\textcircled{4} \frac{m^{10} n^7}{m^1 n^6}$$

In general, if x is nonzero and m, n are positive integers, then

$$\frac{x^m}{x^n} = x^{m-n}.$$

Exercise 21

$$\frac{7^9}{7^6} =$$

Exercise 23

$$\frac{\left(\frac{8}{5}\right)^9}{\left(\frac{8}{5}\right)^2} =$$

Exercise 22

$$\frac{(-5)^{16}}{(-5)^7} =$$

Exercise 24

$$\frac{13^5}{13^4} =$$

Exercise 25

Let a, b be nonzero numbers. What is the following number?

$$\frac{\left(\frac{a}{b}\right)^9}{\left(\frac{a}{b}\right)^2} =$$

Exercise 26

Let x be a nonzero number. What is the following number?

$$\frac{x^5}{x^4} =$$

Can the following expressions be written in simpler forms? If yes, write an equivalent expression for each problem. If not, explain why not.

Exercise 27

$$\frac{2^7}{4^2} = \frac{2^7}{2^4} =$$

Exercise 29

$$\frac{3^5 \cdot 2^8}{3^2 \cdot 2^3} =$$

Exercise 28

$$\frac{3^{23}}{27} = \frac{3^{23}}{3^3} =$$

Exercise 30

$$\frac{(-2)^7 \cdot 95^5}{(-2)^5 \cdot 95^4} =$$

khan academy practice

