

Simplify  $\left( \frac{2x^4y^5}{16x^{-2}y^0} \right)^{-2}$

Simplify fraction  $\frac{2}{16}$

$$\left( \frac{x^4y^5}{8x^{-2}y^0} \right)^{-2}$$

Rule 8

$$\left( \frac{8x^{-2}y^0}{x^4y^5} \right)^2$$

Rule 7 ( $y^0=1$ )

$$\left( \frac{8x^{-2}}{x^4y^5} \right)^2$$

fractions

$$\left( \frac{8}{1} \cdot \frac{x^{-2}}{x^4} \cdot \frac{1}{y^5} \right)^2$$

Rule 2

$$\left( 8 \cdot x^{-6} \cdot \frac{1}{y^5} \right)^2$$

Rule 4

$$8^2 \cdot (x^{-6})^2 \cdot \left( \frac{1}{y^5} \right)^2$$

$(8^2=64)$

$$64 \cdot (x^{-6})^2 \cdot \left( \frac{1}{y^5} \right)^2$$

Rule 3

$$64 \cdot x^{-12} \cdot \left( \frac{1}{y^5} \right)^2$$

Rule 5

$$64 \cdot x^{-12} \cdot \frac{1}{(y^5)^2}$$

Rule 3

$$64 \cdot x^{-12} \cdot \frac{1}{y^{10}}$$

Rule 6

$$64 \cdot \frac{1}{x^{12}} \cdot \frac{1}{y^{10}}$$

fractions

$$\frac{64}{1} \cdot \frac{1}{x^{12}} \cdot \frac{1}{y^{10}}$$

fractions

$$\frac{64}{x^{12}y^{10}}$$

Simplify.

$$\left( \frac{2x^4y^5}{16x^{-2}y^0} \right)^{-2}$$

Simplify fraction  $\frac{2}{16}$

$$\left( \frac{x^4y^5}{8x^{-2}y^0} \right)^{-2}$$

Rule 8

$$\left( \frac{8x^{-2}y^0}{x^4y^5} \right)^2$$

Rule 7 ( $y^0=1$ )

$$\left( \frac{8x^{-2}}{x^4y^5} \right)^2$$

fractions

$$\left( \frac{8 \cdot x^{-2}}{1 \cdot x^4 \cdot y^5} \right)^2$$

Rule 2

$$\left( 8 \cdot x^{-6} \cdot \frac{1}{y^5} \right)^2$$

Rule 4

$$8^2 \cdot (x^{-6})^2 \cdot \left( \frac{1}{y^5} \right)^2$$

$(8^2=64)$

$$64 \cdot (x^{-6})^2 \cdot \left( \frac{1}{y^5} \right)^2$$

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$$64 \cdot x^{-12} \cdot \frac{1}{(y^5)^2}$$

Rule 3

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Rule 6

$$64 \cdot \frac{1}{x^{12}} \cdot \frac{1}{y^{10}}$$

fractions

$$\frac{64}{1} \cdot \frac{1}{x^{12}} \cdot \frac{1}{y^{10}}$$

fractions

$$\frac{64}{x^{12}y^{10}}$$

## → Chapter 3 Test

Feb 12, 2019

### → Announcements

- ① Extra Credit Session TODAY 4:00-5:15 pm in 4-202  
The topic will be proportions, exponent rules, and scientific notation
- ② This week's Math Center assignment is the Ch 3 Lab Activity
- ③ Formulas Test is next Tuesday
- ④ Collect Post-Test Analysis

→ 7 days until Formulas Test 1!

→ Maria Angelica - coach - workshops for the week:

• Today	1:00 - 2:30	
• Wednesday	} 1:00 - 2:30	Room 7-242 (behind the front desk in Math Lab)
• Thursday		

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## How to study for Formulas Test 1

└ "Formulas Test 1 : Use This to Study"

└ → Study this file (in Prof's website)

→ 3 ways to memorize formulas:

- ① Index cards ("boxes" in one side  
"outside the boxes" in the other side)
- ② record yourself saying all of the formulas (voice recorder)
- ③ writing approach (write everything over and over again,  
at least 10 times each formula)

p70    5.735 )     $27cd^3 + 8c^4$

1) Desc. order (skip)  
 because we have  $\neq$  terms/variables

2) GCF

### Steps for factor

- 1) Descending Order
- 2) GCF
- 3) Count the terms

$$c [27d^3 + 8c^3]$$

3) Count the terms (inside the [ ])  
 2 terms

sw:

What do you have to cube to  
 make  $27d^3$ ?  
 "a" =  $3d$

What do you have to cube to  
 make  $8c^3$ ?  
 "b" =  $2c$

So:  $27d^3 + 8c^3$

$$= (3d)^3 + (2c)^3 = [(3d) + (2c)] [(3d)^2 - (3d)(2c) + (2c)^2]$$

$$= \underbrace{27d^3 + 8c^3}_{\downarrow} = (3d + 2c) (9d^2 - 6cd + 4c^2)$$

$$c [27d^3 + 8c^3]$$

$$(c) (3d + 2c) (9d^2 - 6cd + 4c^2)$$

So, the right answer is d

### Two terms:

• sum of squares

$$a^2 - b^2 = (a+b)(a-b)$$

• difference of cubes

$$a^3 - b^3 = (a-b)(a^2 + ab + b^2)$$

• sum of cubes

$$a^3 + b^3 = (a+b)(a^2 - ab + b^2)$$