

## Reviewing the First 3 Rules of Exponents

### 1. Multiplying Powers

Keep the base and add powers

### 2. Dividing Powers

Keep the base and subtract powers

### 3. Power to a Power

Multiply exponents

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$$x^2 \cdot x^3 = x^5$$

$$2x^3 \cdot 3x^2 = 6x^5$$

$$2^3 \cdot 5x^5 =$$

$$8 \cdot 5x^5 = 40x^5$$

$$2^3 \cdot 2^2 = 2^5$$

$$2x^3 \cdot 2x^2 = 4x^5$$

$$\frac{x^4}{x^1} = x^3$$

$$\frac{6x^5}{2x^2} = 3x^3$$

$$\frac{2x^7}{3x^2} = \frac{2}{3}x^5 = \frac{2x^5}{3}$$

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

$$3^2 \cdot 3^3 = 3^5$$

$$(4x^2)^2$$

$$4^2 x^4 = 16x^4$$

Sep 21-9:18 AM

## Practice Problems:

Simplify the exponents.

1)  $g \cdot g^3$

$$g^4$$

2)  $(2n^2)^5$

$$2^5 n^{10} = 32n^{10}$$

3)  $\left(\frac{4k^8}{2k^5}\right)^3$

$$2^3 \cdot 8 = 8k^9$$

\*parentheses  
FIRST\*

7)  $\frac{9z^5}{6z^2} = \frac{3z^3}{2}$

8)  $\frac{3g^6 n^5}{9gn^3} = \frac{g^5 n^2}{3}$

9)  $(3n^3 \cdot n^2 \cdot 4n)^2 = 144n^{12}$

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$$(4) \quad (9b^4h^5)^5$$

Handwritten work:  $9^5 b^{20} h^{25}$   
 $59,049 b^{20} h^{25}$

$$5) \quad \left(\frac{4}{9}\right)^2 \cdot \left(\frac{4}{9}\right)^4$$

$$(4/9)^6$$

$$6) \quad \left(\frac{3b^6s^5}{2b^4s^2}\right)^3$$

$$(3/2 b^2 s^3)^3$$

$$\frac{9b^6s^9}{2}$$

$$(10) \quad \left(\frac{8g^4}{9g}\right)^2 = \left(\frac{8}{9}g^3\right)^2$$

$$\frac{64}{81} g^6$$

$$\frac{64g^6}{81}$$

$$11) \quad \frac{3h^3}{5h^2}$$

$$\frac{3h}{5}$$

$$12) \quad 6z^2 \cdot 2z^5y^6$$

$$12z^7y^6$$

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