


**MasterMath**



Number Sense  
MULTIPLYING AND DIVIDING EXPONENTS

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MULTIPLYING AND DIVIDING EXPONENTS

$2^2$	$= 2 \times 2$	$= 4$
$2^3$	$= 2 \times 2 \times 2$	$= 8$
$2^2 \times 2^3 = 2 \times 2 \times 2 \times 2 \times 2 = 32$		
$2^2 \times 2^3$	$= 2^{2+3}$	$= 2^5 = 32$

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MULTIPLYING AND DIVIDING EXPONENTS

$x^2$	$*$	$x^3$	$=$	$x^5$
$x^2$	$*$	$y^3$	$=$	$x^2y^3$

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## MULTIPLYING AND DIVIDING EXPONENTS

$$\begin{aligned}
 (x^2)^3 &= (x * x)^3 \\
 &= (x * x)(x * x)(x * x) \\
 &= (x^6) = (x^{2*3})
 \end{aligned}$$

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## MULTIPLYING AND DIVIDING EXPONENTS

$$\begin{aligned}
 x^5 \div x^3 &= \frac{\cancel{x}x\cancel{x}x\cancel{x}}{\cancel{x}\cancel{x}\cancel{x}} \\
 &= x^{5-3} = x^2
 \end{aligned}$$

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## MULTIPLYING AND DIVIDING EXPONENTS

$$\begin{aligned}
 \frac{x^5 y^4}{x^3 y^2} &= \frac{\cancel{x}\cancel{x}x\cancel{y}\cancel{y}\cancel{y}\cancel{y}}{\cancel{x}\cancel{x}\cancel{x}\cancel{y}\cancel{y}} \\
 &= x^{5-3} y^{4-2} = x^2 y^2
 \end{aligned}$$

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MULTIPLYING AND DIVIDING EXPONENTS

1936  
 DATE Feb. 30, 2016  
 PAY TO THE ORDER OF My Landlord \$500<sup>8</sup>(3<sup>4</sup>)(2<sup>-12</sup>)  
 Five thousand to zero power times three to the fourth times two to the negative twelve  
 FOR rent Stan  
 0000000186 000000529 1000  
**\$583.86** RECESS

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MULTIPLYING AND DIVIDING EXPONENTS

Simplify:  $x^{15} \div x^{11}$

You Try It!

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MULTIPLYING AND DIVIDING EXPONENTS

Simplify:  $x^{15} \div x^{11}$

**$= x^{15-11} = x^4$**

You Try It!

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## MULTIPLYING AND DIVIDING EXPONENTS

Simplify:  $(6a^8b^5) \div (3ab)$

You Try It!

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## MULTIPLYING AND DIVIDING EXPONENTS

Simplify:  $(6a^8b^5) \div (3ab)$

$$= (6 \div 3)a^{8-1}b^{5-1}$$

$$= 2a^7b^4$$

You Try It!

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## MULTIPLYING AND DIVIDING EXPONENTS

Simplify:  $(x^5)^3 \div (x^2 \cdot x^3)$

Remember PEMDAS

You Try It!

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## MULTIPLYING AND DIVIDING EXPONENTS

Simplify:  $(x^5)^3 \div (x^2 \cdot x^3)$ 

$$= x^{5 \cdot 3} \div x^{2+3}$$

$$= x^{15} \div x^5$$

$$= x^{15-5}$$

$$= x^{10}$$

You Try 


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## MULTIPLYING AND DIVIDING EXPONENTS

Now, try it on your own. Go to

[www.MasterMath.info](http://www.MasterMath.info)

download

[Multiplying and Dividing  
Exponents](#)

from the Worksheets Page, and test your skill. Then see how much you understand by taking the Subject Quiz




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