Algebra 1
Scientific Notation;
Fractional Exponents
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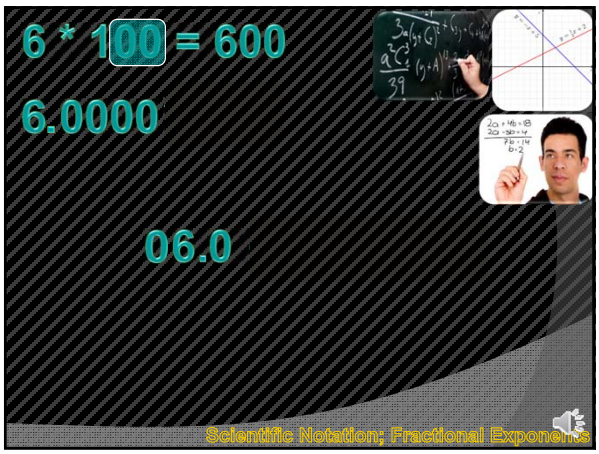
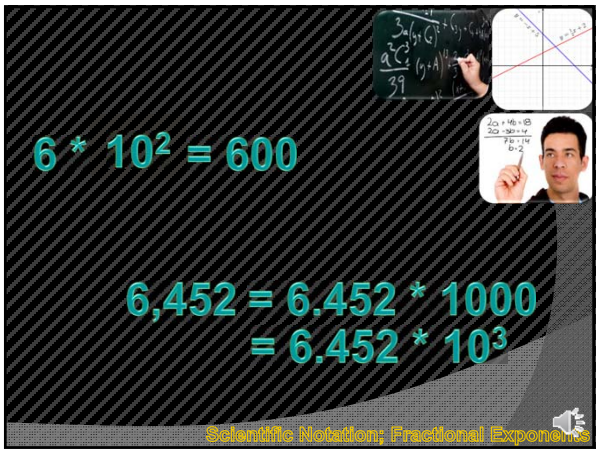
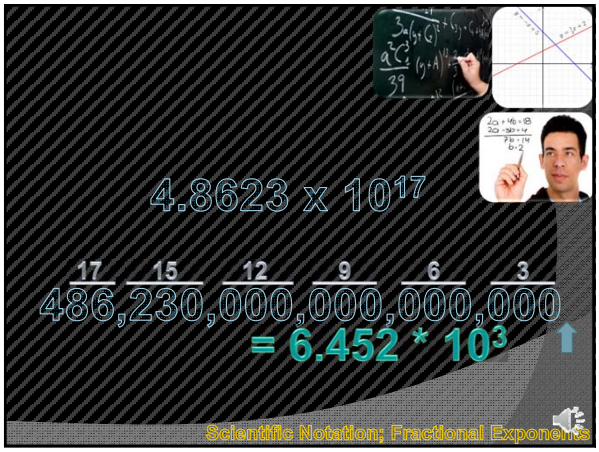
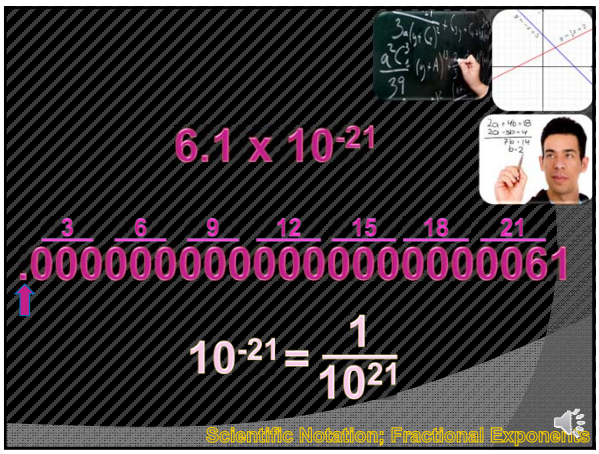
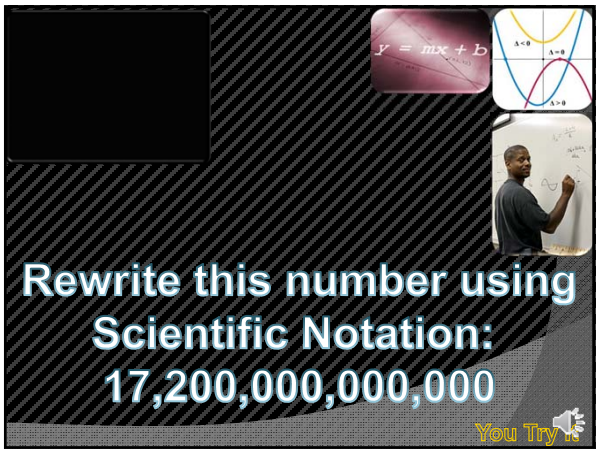
Overview

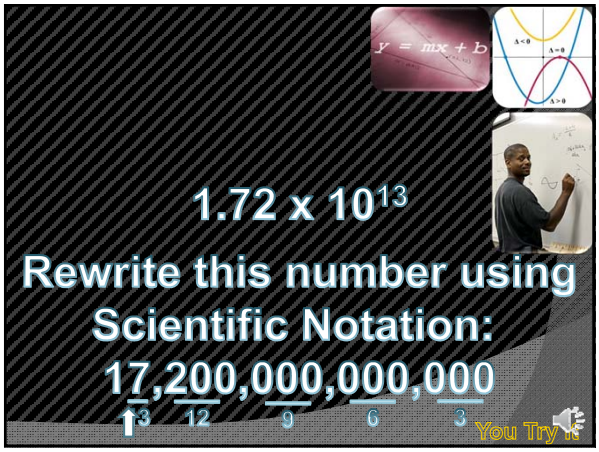

6 * 100 = 600
6.0000
06.0
Scientific Notation; Fractional Exponents

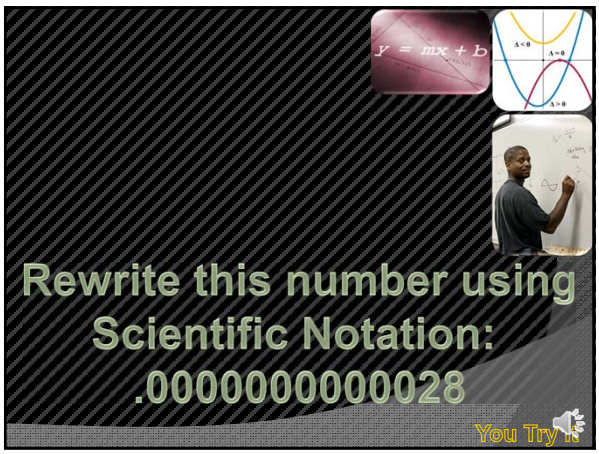

$6 * 10^2 = 600$
$6{,}452 = 6.452 * 1000$
$= 6.452 * 10^3$
Scientific Notation; Fractional Exponents

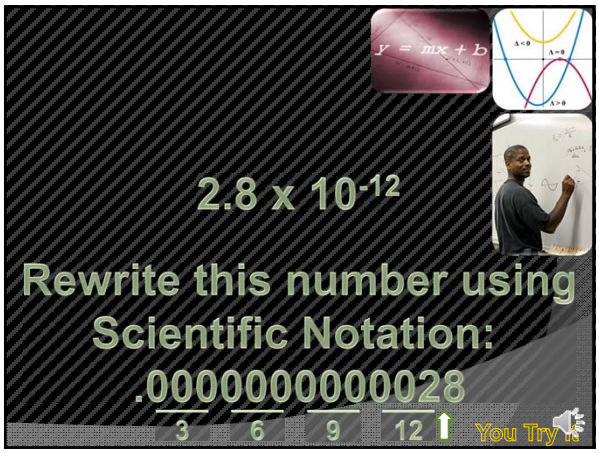

4.8623×10^{17}
17 15 12 9 6 3
486,230,000,000,000,000
$= 6.452 * 10^3$
Scientific Notation; Fractional Exponents

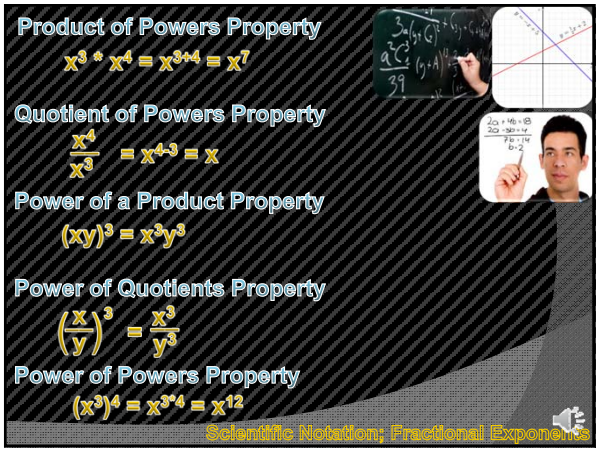

6.1×10^{-21}
3 6 9 12 15 18 21
.000000000000000000061
$10^{-21} = \frac{1}{10^{21}}$
Scientific Notation; Fractional Exponents

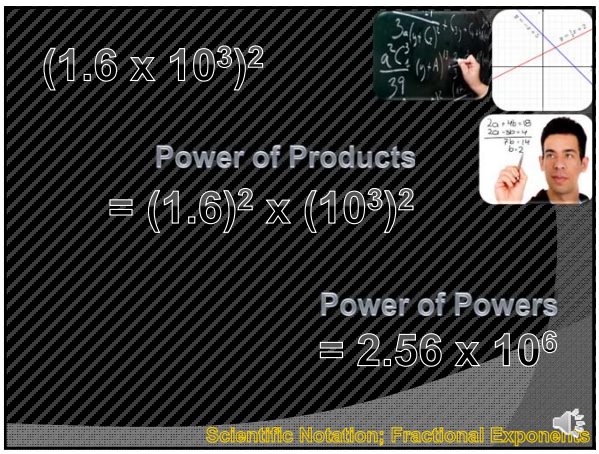

Rewrite this number using Scientific Notation:
17,200,000,000,000
You Try It

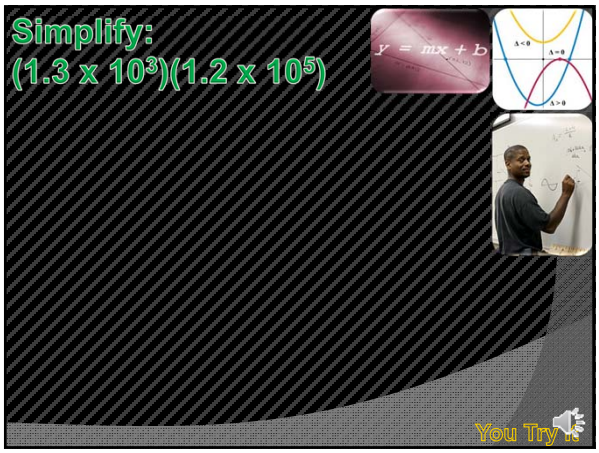

1.72 x 10^13
Rewrite this number using Scientific Notation:
17,200,000,000,000
13 12 9 6 3
You Try It


Rewrite this number using Scientific Notation:
.0000000000028
You Try It

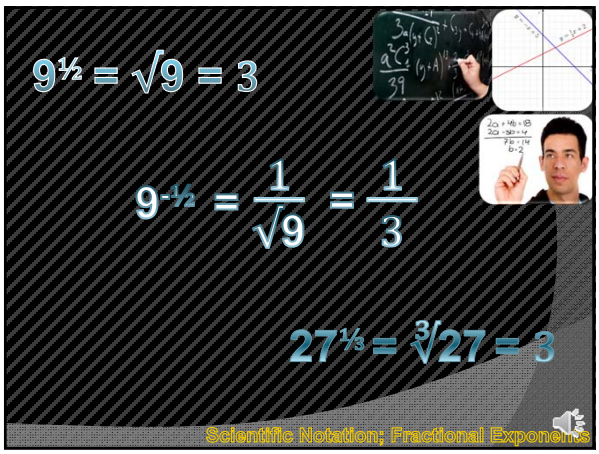

2.8×10^{-12}
Rewrite this number using Scientific Notation:
.0000000000028
3
6
9
12
You Try It

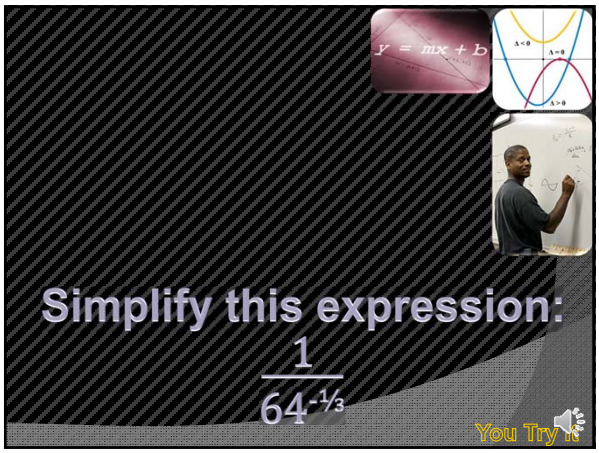

Product of Powers Property
$x^3 * x^4 = x^{3+4} = x^7$
Quotient of Powers Property
$\frac{x^4}{x^3} = x^{4-3} = x$
Power of a Product Property
$(xy)^3 = x^3y^3$
Power of Quotients Property
$\left(\frac{x}{y}\right)^3 = \frac{x^3}{y^3}$
Power of Powers Property
$(x^3)^4 = x^{3*4} = x^{12}$
Scientific Notation; Fractional Exponents

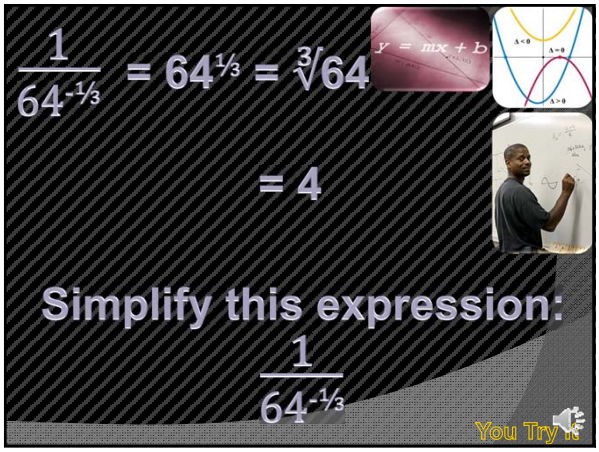

$(1.6 \times 10^3)^2$
Power of Products
$= (1.6)^2 \times (10^3)^2$
Power of Powers
$= 2.56 \times 10^6$
Scientific Notation; Fractional Exponents

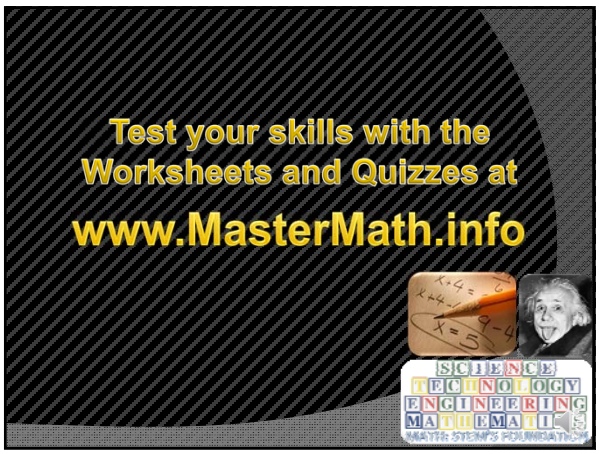

Simplify:
$(1.3 \times 10^3)(1.2 \times 10^5)$
You Try it

Simplify:
$(1.3 \times 10^3)(1.2 \times 10^5)$
$= 1.3 \times 1.2 \times 10^3 \times 10^5$
$= 1.56 \times 10^8$
You Try it


$9^{1/2} = \sqrt{9} = 3$
$9^{-1/2} = \frac{1}{\sqrt{9}} = \frac{1}{3}$
$27^{1/3} = \sqrt[3]{27} = 3$
Scientific Notation; Fractional Exponents


Simplify this expression:
$\frac{1}{64^{-1/3}}$
You Try it


$\frac{1}{64^{-1/3}} = 64^{1/3} = \sqrt[3]{64}$
$= 4$
Simplify this expression:
$\frac{1}{64^{-1/3}}$
You Try it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