Algebra and Logarithms

Calculations	History	Properties	Stupid questions	Graphs
100	100	100	100	100
200	200	200	200	200
300	300	300	300	300
400	400	400	400	400

Player A

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Calculations for 100.

$\log_2 8 \; = \; ?$

a 8

b 16

c 4

d 3

e 2

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Calculations for 200.

$$\log_3 \frac{1}{27} = ?$$

a 3

b 9

c 1/9

d -3

e 1/3

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Calculations for 300.

$$\log_{10} \frac{1}{1000000} = ?$$

a 10

b 1/1000

c 7

d -6

e -10

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Calculations for 400.

$\log_4 4096 \ = \ ?$

a 4

b 5

c 6

d 7

e 8

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History for 100.

How the logarithms were stored in the past?

a As graphs

b As mementos

c As slide rules

d As tables

e As letters

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History for 200.

The number e is named for

a Newton

b Pythagoras

c Efficiency

d Euler

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EGRIS

History for 300.

Who discovered logarithms?

a Euler

b Briggs

c Obama

d Napier

e Gauss

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History for 400.

Logarithms were discovered in what century?

a 20th

b 19th

c 18th

d 17th

e 16th

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EGRIS

Properties for 100.

Which property is used to multiply large numbers fast?

a Base change

b Reduction of exponent to multiplication

c Changing multiplication to addition

d Cancelation of powers

e Use of complex numbers

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EGRIS

Properties for 200.

Base change formula

a $\log_a x = \dfrac{\log_x a}{\log_c a}$

b $\log_a x = \dfrac{\log_a x}{\log_c a}$

c $\log_a x = \dfrac{\log_c x}{\log_c a}$

d $\log_a x = \dfrac{\log_c a}{\log_c x}$

e $\log_a x = \dfrac{\log_c x}{\log_c x}$

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EGRIS

Properties for 300.

What property of logarithms is used in this equation,

$$\log_2 2x = \log_2 x + 1$$

a Addition of real numbers

b Base change

c Reduction of exponent to multiplication

d Changing multiplication to addition

e Cancelation of powers

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EGRIS

Properties for 400.

What property of logarithms is NOT used in

$$\log_4 xy^t = \frac{1}{2}(\log_2 x + t \log_2 y)$$

a Reduction of exponent to multiplication

b Changing multiplication to addition

c $\log_a a^n = n$

d Base change

e Factoring out coefficients

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EGRIS

Stupid questions for 100.

$\log_a a \; = \; ?$

a) a

b) 0

c) 1

d) 2

e) none of the above

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EGRIS

Stupid questions for 200.

$\log_{121} 121^5 = ?$

a 11

b 121

c 1

d 5

e 1/5

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EGRIS

Stupid questions for 300.

Let $a > 0$. When a^x makes sense?

a Always

b Only for $x > 0$

c Only for $x < 0$

d Only for integer x

e Only when x is a fraction

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EGRIS

Stupid questions for 400.

Let $a < 0$. When a^x makes sense?

a Always

b Only for $x > 0$

c Only for $x < 0$

d Only for integer x

e None of the above

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Graphs for 100.

The graph of $y = 2^x$ has the following property:

a Has a shape of a parabola

b Has a shape of hyperbola

c Is decreasing

d Is increasing

e Passes through point (0,0)

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EGRIS

Graphs for 200.

The graph of $y = \log_3 x$ has the following property:

a Has a shape of a parabola

b Has a shape of hyperbola

c Is decreasing

d Is increasing

e Passes through point (0,0)

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Graphs for 300.

Graphs $y = \log_a x$ are increasing when:

a Always

b When $a > 0$

c When $a < 0$

d Only when $a > 1$

e Only when $x > 1$

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Graphs for 400.

All graphs $y = \log_a x$ always pass through:

a Points $(0, 0)$ and $(1, 1)$

b Points $(a, 0)$ and $(1, a)$

c Points $(1, 0)$ and $(a, 1)$

d Points $(0, 1)$ and $(a, 1)$

e None of the above

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