



Convert between exponential and logarithmic form

1

What does the logarithm equation mean?

$$\log_5 25 = ?$$

A

What number would you raise 5 by to result in 25?

B

What number would you raise 25 by to result in 5?

2

What does the logarithm equation mean?

$$\log_{10} 1,000 = 3$$

A

To result in 1,000, you would raise 10 to the power of 3

B

To result in 10, you would raise 1,000 to the power of 3

3

What does the logarithm equation mean?

$$\log_4 80 = ?$$

A

What number would you raise 4 by to result in 80?

B

What number would you raise 80 by to result in 4?

4

Which logarithm equation answers this?

What number would you raise

$$\frac{1}{3} \text{ by to result in } \frac{1}{81}?$$

A

$$\log_? \frac{1}{3} = \frac{1}{81}$$

B

$$\log_? \frac{1}{81} = \frac{1}{3}$$

C

$$\log_{\frac{1}{3}} \frac{1}{81} = ?$$

D

$$\log_{\frac{1}{81}} \frac{1}{3} = ?$$

5

Convert the given exponent to the equivalent in logarithm form

$$(7)^{-2} = \frac{1}{49}$$

A

$$\log_{\frac{1}{49}} 7 = -2$$

B

$$\log_{\frac{1}{49}} -2 = 7$$

C

$$\log_7 \frac{1}{49} = -2$$

D

$$\log_{-2} \frac{1}{49} = 7$$

6

Convert the given exponent to the equivalent in logarithm form

$$2^{8.78} = 441$$

A

$$\log_{441} 8.78 = 2$$

B

$$\log_{8.78} 441 = 2$$

C

$$\log_2 441 = 8.78$$

7

Convert the given exponent to the equivalent in logarithm form

$$10^3 = 1,000$$

A

$$\log_3 1,000 = 10$$

B

$$\log_{1,000} 3 = 10$$

C

$$\log_3 10 = 1,000$$

D

$$\log_{10} 1,000 = 3$$



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8

Convert the given exponent to the equivalent in logarithm form

$$\left(\frac{1}{9}\right)^2 = \frac{1}{81}$$

A $\log_{\frac{1}{9}} \frac{1}{81} = 2$

B $\log_2 \frac{1}{9} = \frac{1}{81}$

C $\log_{\frac{1}{81}} 2 = \frac{1}{9}$

D $\log_2 \frac{1}{81} = \frac{1}{9}$

9

Convert the given logarithm to the equivalent in exponent form

$$\log_6 402 = 3.35$$

A $6^{3.35} = 402$

B $402^6 = 3.35$

C $3.35^6 = 402$

D $402^{3.35} = 6$

E $3.35^{402} = 6$

10

Convert the given logarithm to the equivalent in exponent form

$$\log_e x = 2.65$$

A $2.65^e = x$

B $x^e = 2.65$

C $e^{2.65} = x$

D $2.65^x = e$

11

Convert the given logarithm to the equivalent in exponent form

$$\log_{10} 10,000 = 4$$

A $4^{10} = 10,000$

B $10,000^4 = 10$

C $10^4 = 10,000$

D $4^{10,000} = 10$

E $10,000^{10} = 4$

12

Convert the given exponent to the equivalent in logarithm form

$$e^{3.63} = x$$

A $\log_{3.63} x = e$

B $\log_x e = 3.63$

C $\log_{3.63} e = x$

D $\log_e x = 3.63$

E $\log_x 3.63 = e$

13

Convert the given logarithm to the equivalent in exponent form

$$\log_4 338 = 4.2$$

A $338^4 = 4.2$

B $4.2^4 = 338$

C $338^{4.2} = 4$

D $4^{4.2} = 338$

14

Convert the given logarithm to the equivalent in exponent form

$$\log_6 \frac{1}{216} = -3$$

A $\frac{1}{216}^6 = -3$

B $-3^6 = \frac{1}{216}$

C $-3^{\frac{1}{216}} = 6$

D $6^{-3} = \frac{1}{216}$

15

Convert the given exponent to the equivalent in logarithm form

$$8^2 = 64$$

A $\log_8 64 = 2$

B $\log_{64} 2 = 8$

C $\log_{64} 8 = 2$

D $\log_2 8 = 64$



Convert between exponential and logarithmic form

16

Convert the given logarithm to the equivalent in exponent form

$$\log_{\frac{1}{5}} \frac{1}{125} = 3$$

A

$$\frac{1}{125}^{\frac{1}{5}} = 3$$

B

$$3^{\frac{1}{5}} = \frac{1}{125}$$

C

$$\frac{1^3}{5} = \frac{1}{125}$$

D

$$3^{\frac{1}{125}} = \frac{1}{5}$$

17

Which logarithm equation shows this?

To result in $\frac{1}{16}$, you would

raise $\frac{1}{2}$ to the power of 4

A

$$\log_{\frac{1}{16}} 4 = \frac{1}{2}$$

B

$$\log_4 \frac{1}{16} = \frac{1}{2}$$

C

$$\log_{\frac{1}{16}} \frac{1}{2} = 4$$

D

$$\log_{\frac{1}{2}} \frac{1}{16} = 4$$

18

To result in 35, you would raise 3 to the power of 3.24

A

$$\log_{35} 3 = 3.24$$

B

$$\log_{3.24} 3 = 35$$

C

$$\log_{3.24} 35 = 3$$

D

$$\log_3 35 = 3.24$$

19

Which logarithm equation shows this?

To result in 5.09, you would raise e to the power of x

A

$$\log_{5.09} x = e$$

B

$$\log_x 5.09 = e$$

C

$$\log_x e = 5.09$$

D

$$\log_e 5.09 = x$$

20

To result in 36, you would raise 6 to the power of 2

A

$$\log_2 36 = 6$$

B

$$\log_{36} 2 = 6$$

C

$$\log_{36} 6 = 2$$

D

$$\log_6 36 = 2$$