



Convert between exponential and logarithmic form

- 1** What does the logarithm equation mean?

$$\log_8 64 = ?$$

- A What number would you raise 64 by to result in 8?
- B What number would you raise 8 by to result in 64?

- 2** What number would you raise 2 by to result in 4?

- A $\log_2 4 = ?$
- B $\log_4 2 = ?$
- C $\log_? 4 = 2$
- D $\log_? 2 = 4$

- 3** What does the logarithm equation mean?

$$\log_5 125 = 3$$

- A To result in 5, you would raise 125 to the power of 3
- B To result in 125, you would raise 5 to the power of 3

- 4** To result in 9, you would raise 3 to the power of 2

- A $\log_2 9 = 3$
- B $\log_9 2 = 3$
- C $\log_3 9 = 2$
- D $\log_9 3 = 2$

- 5** What does the logarithm equation mean?

$$\log_4 97 = 3.3$$

- A To result in 4, you would raise 97 to the power of 3.3
- B To result in 97, you would raise 4 to the power of 3.3

- 6** Which logarithm equation shows this?

To result in $\frac{1}{9}$, you would
raise $\frac{1}{3}$ to the power of 2

- A $\log_2 \frac{1}{9} = \frac{1}{3}$
- B $\log_{\frac{1}{3}} \frac{1}{9} = 2$
- C $\log_{\frac{1}{9}} 2 = \frac{1}{3}$
- D $\log_2 \frac{1}{3} = \frac{1}{9}$

- 7** Which logarithm equation shows this?
To result in 3.17, you would
raise e to the power of x

- A $\log_{3.17} x = e$
- B $\log_x 3.17 = e$
- C $\log_e 3.17 = x$

- 8** Convert the given exponent to the equivalent in logarithm form

$$(5)^{-2} = \frac{1}{25}$$

- A $\log_{\frac{1}{25}} -2 = 5$
- B $\log_5 \frac{1}{25} = -2$
- C $\log_{\frac{1}{25}} 5 = -2$
- D $\log_{-2} 5 = \frac{1}{25}$



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What does the logarithm equation mean?

$$\log_{\frac{1}{4}} \frac{1}{64} = 3$$

A

To result in $\frac{1}{4}$, you would raise $\frac{1}{64}$ to the power of 3

B

To result in $\frac{1}{64}$, you would raise $\frac{1}{4}$ to the power of 3

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Convert the given exponent to the equivalent in logarithm form

$$10^2 = 100$$

A $\log_{10} 100 = 2$

B $\log_{100} 2 = 10$

C $\log_2 100 = 10$

D $\log_{100} 10 = 2$

E $\log_2 10 = 100$

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Convert the given exponent to the equivalent in logarithm form

$$2^{8.38} = 334$$

A $\log_{334} 2 = 8.38$

B $\log_{8.38} 2 = 334$

C $\log_{8.38} 334 = 2$

D $\log_2 334 = 8.38$

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Convert the given exponent to the equivalent in logarithm form

$$\left(\frac{1}{3}\right)^4 = \frac{1}{81}$$

A $\log_{\frac{1}{81}} \frac{1}{3} = 4$

B $\log_{\frac{1}{3}} \frac{1}{81} = 4$

C $\log_4 \frac{1}{3} = \frac{1}{81}$

D $\log_{\frac{1}{81}} 4 = \frac{1}{3}$

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Convert the given logarithm to the equivalent in exponent form

$$\log_4 211 = 3.86$$

A $3.86^{211} = 4$

B $4^{3.86} = 211$

C $211^{3.86} = 4$

D $3.86^4 = 211$



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Convert the given logarithm to the equivalent in exponent form

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

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

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

C $10^4 = 10,000$

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

E $10,000^4 = 10$

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Convert the given exponent to the equivalent in logarithm form

$$e^x = 5.86$$

A $\log_x e = 5.86$

B $\log_{5.86} e = x$

C $\log_{5.86} x = e$

D $\log_e 5.86 = x$

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Convert the given logarithm to the equivalent in exponent form

$$\log_e x = 3.88$$

A $3.88^e = x$

B $x^{3.88} = e$

C $e^{3.88} = x$

D $x^e = 3.88$

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Convert the given exponent to the equivalent in logarithm form

$$8^2 = 64$$

A $\log_8 64 = 2$

B $\log_{64} 8 = 2$

C $\log_{64} 2 = 8$

D $\log_2 8 = 64$

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Convert the given logarithm to the equivalent in exponent form

$$\log_9 3,394 = 3.7$$

A $9^{3.7} = 3,394$

B $3,394^{3.7} = 9$

C $3,394^9 = 3.7$

D $3.7^9 = 3,394$