Name

Logarithms - Convert Exponent to Logarithm - Fraction Base

1 Convert the given exponent to the equivalent in logarithm form

$$\left(\frac{1}{10}\right)^5 = \frac{1}{100,000}$$

A $\log_5 \frac{1}{100,000} = \frac{1}{10}$

B $\log_{\frac{1}{100,000}} 5 = \frac{1}{10}$

C $\log_{\frac{1}{100,000}} \frac{1}{10} = 5$

D $\log_{\frac{1}{10}} \frac{1}{100,000} = 5$

2 Convert the given exponent to the equivalent in logarithm form

$$\left(\frac{1}{5}\right)^3 = \frac{1}{125}$$

A $\log_3 \frac{1}{5} = \frac{1}{125}$

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

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

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

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

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

4 Convert the given exponent to the equivalent in logarithm form

$$\left(\frac{1}{8}\right)^2 = \frac{1}{64}$$

A $\log_2 \frac{1}{8} = \frac{1}{64}$

B $\log_{\frac{1}{64}} 2 = \frac{1}{8}$

C $\log_{\frac{1}{8}} \frac{1}{64} = 2$

5 Convert the given exponent to the equivalent in logarithm form

$$\left(\frac{1}{2}\right)^2 = \frac{1}{4}$$

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

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

C $\log_2 \frac{1}{2} = \frac{1}{4}$

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

6 Convert the given exponent to the equivalent in logarithm form

$$\left(\frac{1}{4}\right)^2 = \frac{1}{16}$$

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

B $\log_2 \frac{1}{16} = \frac{1}{4}$

C $\log_2 \frac{1}{4} = \frac{1}{16}$

7 Convert the given exponent to the equivalent in logarithm form

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

A $\log_2 \frac{1}{25} = \frac{1}{5}$

B $\log_{\frac{1}{25}} \frac{1}{5} = 2$

C $\log_{\frac{1}{25}} 2 = \frac{1}{5}$

D $\log_{\frac{1}{5}} \frac{1}{25} = 2$

8 Convert the given exponent to the equivalent in logarithm form

$$\left(\frac{1}{6}\right)^2 = \frac{1}{36}$$

A $\log_{\frac{1}{36}} 2 = \frac{1}{6}$

B $\log_2 \frac{1}{36} = \frac{1}{6}$

C $\log_{\frac{1}{6}} \frac{1}{36} = 2$

D $\log_2 \frac{1}{6} = \frac{1}{36}$