Fractional and Negative Indices

1

Work out 3^{-2}.

3^{-2}

$= \frac{1}{3^2}$

$= \frac{1}{\square}$

Answer _____

2

Work out 4^{-3}.

4^{-3}

$= \frac{1}{\square}$

$= \frac{1}{\square}$

Answer _____

3

Work out $36^{\frac{1}{2}}$.

$36^{\frac{1}{2}}$

$= \sqrt{36}$

$= \square$

Answer _____

4

Work out $64^{\frac{1}{3}}$.

$64^{\frac{1}{3}}$

$= \sqrt[3]{\square}$

$= \square$

Answer _____

5

Work out $16^{-\frac{1}{2}}$.

$16^{-\frac{1}{2}}$

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

$= \frac{1}{\sqrt{\square}}$

$= \frac{1}{\square}$

Answer _____

6

Work out $27^{-\frac{1}{3}}$.

$27^{-\frac{1}{3}}$

$= \frac{1}{\square}$

$= \frac{1}{\sqrt[3]{\square}}$

$= \frac{1}{\square}$

Answer _____

7

Write $\frac{1}{81}$ as a power of 9.

$\frac{1}{81} = \frac{1}{\square}$

$= \square$

Answer _____

8

Ali says $5^{-2} = -25$. What has Ali done wrong?

Ali's mistake: _____

$5^{-2} =$ _____

Fractional and Negative Indices *further practice*

9

Work out 9^{-2}.

Answer _____

10

Work out $144^{\frac{1}{2}}$.

Answer _____

11

Work out $1000^{-\frac{1}{3}}$.

Answer _____

12

Write $\frac{1}{32}$ as a power of 2.

Answer _____

13

Find the value of n. $81^n = 9$

$n =$ _____

14

Write these in order, smallest first.

4^{-1} $16^{\frac{1}{2}}$ $8^{-\frac{1}{3}}$ 2^{-3}

Order _____

15

The mass of a sample after n hours is 2^{-n} grams. Find its mass after 3 hours.

Answer _____

16

Is $49^{-\frac{1}{2}}$ bigger or smaller than 7^{-1}, or the same? Explain.

Answer _____