# Decode the Maths Joke

## Negative Indices

Calculate a value for each of the letters of the alphabet.

| | | |
|---|---|---|
| **A** | $2^{-1}$ | |
| **B** | $3^{-2}$ | |
| **C** | $\left(\frac{1}{5}\right)^{-1}$ | |
| **D** | $5^{-2}$ | |
| **E** | $6^{-3}$ | |
| **F** | $3^{-1}$ | |
| **G** | $\left(\frac{1}{4}\right)^{-3}$ | |
| **H** | $6^{-2}$ | |
| **I** | $\left(\frac{2}{3}\right)^{-1}$ | |
| **J** | $\left(\frac{2}{5}\right)^{-3}$ | |
| **K** | $(-5)^{-1}$ | |
| **L** | $2^{-3}$ | |
| **M** | $\left(\frac{1}{2}\right)^{-3}$ | |

| | | |
|---|---|---|
| **N** | $1^{-2}$ | |
| **O** | $7^{-1}$ | |
| **P** | $10^{-3}$ | |
| **Q** | $5^{-1}$ | |
| **R** | $\left(\frac{5}{2}\right)^{-3}$ | |
| **S** | $\left(\frac{3}{2}\right)^{-1}$ | |
| **T** | $11^{-2}$ | |
| **U** | $3^{-4}$ | |
| **V** | $13^{-1}$ | |
| **W** | $\left(-\frac{1}{7}\right)^{-1}$ | |
| **X** | $7^{-2}$ | |
| **Y** | $7^{-3}$ | |
| **Z** | $10^{-1}$ | |

Now decode the joke….

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $\frac{1}{36}$ | $\frac{1}{216}$ | $\frac{1}{2}$ | $\frac{8}{125}$ | $\frac{1}{25}$ | | $\frac{1}{2}$ | $\frac{1}{9}$ | $\frac{1}{7}$ | $\frac{1}{81}$ | $\frac{1}{121}$ | | $\frac{1}{121}$ | $\frac{1}{36}$ | $\frac{1}{216}$ | |
| | | | | | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | $\frac{1}{2}$ | $\frac{1}{121}$ | $\frac{1}{36}$ | $\frac{2}{3}$ | | $\frac{1}{1000}$ | $\frac{1}{8}$ | $\frac{1}{2}$ | 1 | $\frac{1}{121}$ | ? | | $\frac{3}{2}$ | $\frac{1}{121}$ | |
| | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $\frac{1}{36}$ | $\frac{1}{2}$ | $\frac{2}{3}$ | | $\frac{2}{3}$ | $\frac{1}{5}$ | $\frac{1}{81}$ | $\frac{1}{2}$ | $\frac{8}{125}$ | $\frac{1}{216}$ | | $\frac{8}{125}$ | $\frac{1}{7}$ | $\frac{1}{7}$ | $\frac{1}{121}$ | $\frac{2}{3}$ |
| | | | | | | | | | | | | | | | |