**Negative Indices**

**Decode the Maths Joke**

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **A** | $$2^{-1}$$ |  |  | **N** | $$1^{-2}$$ |  |
| **B** | $$3^{-2}$$ |  |  | **O** | $$7^{-1}$$ |  |
| **C** | $$\left(\frac{1}{5}\right)^{-1}$$ |  |  | **P** | $$10^{-3}$$ |  |
| **D** | $$5^{-2}$$ |  |  | **Q** | $$5^{-1}$$ |  |
| **E** | $$6^{-3}$$ |  |  | **R** | $$\left(\frac{5}{2}\right)^{-3}$$ |  |
| **F** | $$3^{-1}$$ |  |  | **S** | $$\left(\frac{3}{2}\right)^{-1}$$ |  |
| **G** | $$\left(\frac{1}{4}\right)^{-3}$$ |  |  | **T** | $$11^{-2}$$ |  |
| **H** | $$6^{-2}$$ |  |  | **U** | $$3^{-4}$$ |  |
| **I** | $$\left(\frac{2}{3}\right)^{-1}$$ |  |  | **V** | $$13^{-1}$$ |  |
| **J** | $$\left(\frac{2}{5}\right)^{-3}$$ |  |  | **W** | $$\left(-\frac{1}{7}\right)^{-1}$$ |  |
| **K** | $$(-5)^{-1}$$ |  |  | **X** | $$7^{-2}$$ |  |
| **L** | $$2^{-3}$$ |  |  | **Y** | $$7^{-3}$$ |  |
| **M** | $$\left(\frac{1}{2}\right)^{-3}$$ |  |  | **Z** | $$10^{-1}$$ |  |

Now decode the joke….

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| $$\frac{1}{36}$$ | $$\frac{1}{216}$$ | $$\frac{1}{2}$$ | $$\frac{8}{125}$$ | $$\frac{1}{25}$$ |  | $$\frac{1}{2}$$ | $$\frac{1}{9}$$ | $$\frac{1}{7}$$ | $$\frac{1}{81}$$ | $$\frac{1}{121}$$ |  | $$\frac{1}{121}$$ | $$\frac{1}{36}$$ | $$\frac{1}{216}$$ |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $$8$$ | $$\frac{1}{2}$$ | $$\frac{1}{121}$$ | $$\frac{1}{36}$$ | $$\frac{2}{3}$$ |  | $$\frac{1}{1000}$$ | $$\frac{1}{8}$$ | $$\frac{1}{2}$$ | $$1$$ | $$\frac{1}{121}$$ | ? |  | $$\frac{3}{2}$$ | $$\frac{1}{121}$$ |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $$\frac{1}{36}$$ | $$\frac{1}{2}$$ | $$\frac{2}{3}$$ |  | $$\frac{2}{3}$$ | $$\frac{1}{5}$$ | $$\frac{1}{81}$$ | $$\frac{1}{2}$$ | $$\frac{8}{125}$$ | $$\frac{1}{216}$$ |  | $$\frac{8}{125}$$ | $$\frac{1}{7}$$ | $$\frac{1}{7}$$ | $$\frac{1}{121}$$ | $$\frac{2}{3}$$ |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |