**Simplifying Expressions**

**Decode the Maths Joke**

Simplify the expression for each of the letters of the alphabet.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **A** | $$a+a$$ |  |  | **N** | $$a×a$$ |  |
| **B** | $$a+a+b$$ |  |  | **O** | $$3×a×a$$ |  |
| **C** | $$b+b+b$$ |  |  | **P** | $$20b÷4$$ |  |
| **D** | $$a+b+b$$ |  |  | **Q** | $$2a-a-a$$ |  |
| **E** | $$5b-b$$ |  |  | **R** | $$5b×b$$ |  |
| **F** | $$2a+b+b $$ |  |  | **S** | $$10b×2b$$ |  |
| **G** | $$6a-a-a$$ |  |  | **T** | $$a^{2}+7a^{2}$$ |  |
| **H** | $$a×b$$ |  |  | **U** | $$9b^{2}-2b^{2}$$ |  |
| **I** | $$2a+4a$$ |  |  | **V** | $$a+a+a^{2}$$ |  |
| **J** | $$7b-2b+b$$ |  |  | **W** | $$7×3b^{2}$$ |  |
| **K** | $$9×a$$ |  |  | **X** | $$5b^{2}-a^{2}+2b^{2}$$ |  |
| **L** | $$3×5a$$ |  |  | **Y** | $$5a×2b$$ |  |
| **M** | $$6a-a+3b+b$$ |  |  | **Z** | $$a×3a×4b$$ |  |

Now decode the joke….

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| $$21b^{2}$$ | $$ab$$ | $$2a$$ | $$8a^{2}$$ |  | $$a+2b$$ | $$6a$$ | $$a+2b$$ |  | $$8a^{2}$$ | $$ab$$ | $$4b$$ |  | $$8a^{2}$$ | $$5b^{2}$$ |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $$6a$$ | $$2a$$ | $$a^{2}$$ | $$4a$$ | $$15a$$ | $$4b$$ |  | $$20b^{2}$$ | $$2a$$ | $$10ab$$ |  | $$8a^{2}$$ | $$3a^{2}$$ |  | $$8a^{2}$$ |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $$ab$$ | $$4b$$ |  | $$3b$$ | $$6a$$ | $$5b^{2}$$ | $$3b$$ | $$15a$$ | $$4b$$ | ? |  | $$10ab$$ | $$3a^{2}$$ | $$7b^{2}$$ | ‘ |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $$5b^{2}$$ | $$4b$$ |  | $$5b$$ | $$3a^{2}$$ | $$6a$$ | $$a^{2}$$ | $$8a^{2}$$ | $$15a$$ | $$4b$$ | $$20b^{2}$$ | $$20b^{2}$$ | ! |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |