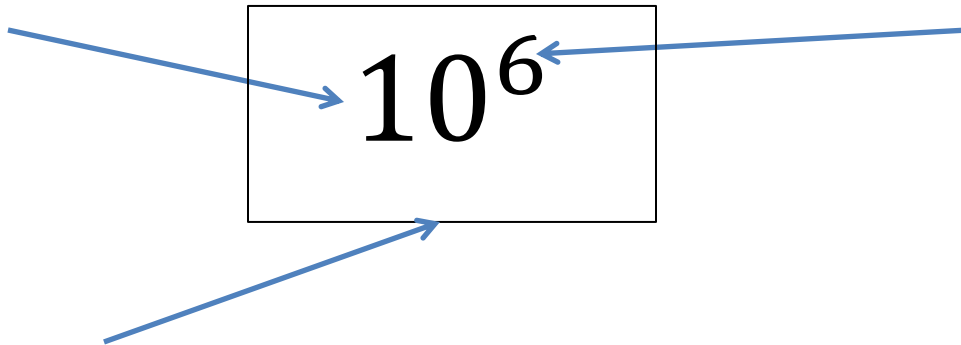


M9

## 2.1 Exponents



- **An exponent** is used to simplify repeated multiplication.
  - The operation is called **exponentiation**.

Examples	
Repeated multiplication = expanded form	Exponent form = exponentiation

- There are two special exponents that have their own name:

The exponent of 2	The exponent of 3
<b>Square</b>	<b>Cube</b>
$x^2$	$x^3$
We say:	We say:

- If a number or a variable does not have an exponent written down, the exponent is \_\_\_\_\_

Practice:

1. Circle the base in each expression.

1	$5^4$	6	$x^2$
2	$(-2)^4$	7	$5x^{10}$
3	$-9^2$	8	$\left(\frac{x}{5}\right)^6$
4	$\left(\frac{1}{2}\right)^5$	9	$-(-3)^8$
5	$\frac{4^3}{5}$	10	$(-15^4)^2$

2. Write the expression in English.

$5^2$	
$2^3$	
$4^9$	
$10^{11}$	
$3^1$	

3. Write in expended form.

$6^2$	
$(-4)^3$	
$x^6$	
$-10^5$	
10	

4. Evaluate using your calculator.

$2^9$	$3^3$	$(-4)^2$	$(-1)^2$	$(-6)^0$	$-15^2$

**Perfect Squares = Square Numbers**

- Non-negative integers that are the result of a integer being squared.

Exponent Form	Square Number

Exponent Form	Square Number