Mathematics 9
Section 2.1 – What is a Power?

A power refers to a number that has an exponent attateled to it.

6^4 ← Power

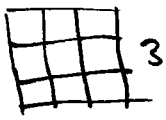
A power is made up of two different parts → a base and an exponent

6^4 ← Exponent, Base

The above power would be read as → 'six to the power of four'

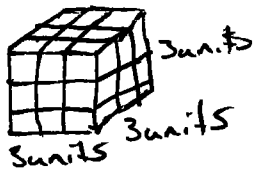
There are two common types of powers → x^2 and x^3

x^2 → we call this 'squaring' the number

so 3^2 = 

= 3×3 = 9

x^3 → we call this 'cubing' the number

so 3^3 = 

= 3×3×3 = 27

Questions/Answers can be written in 3 different forms:

4^3 → a Power

4×4×4 → Repeated Multiplication

64 → Standard Form (or Evaluated)

When you have negative signs and exponents, you need to pay close attention to where the negative sign is located. Different placements can result in different answers:

Power	Repeated Multiplication	Standard Form
$(-5)^4$	$(-5)\times(-5)\times(-5)\times(-5)$	625
-5^4	$-(5\times5\times5\times5) = -625$	-625
$-(-5^4)$	$-(-(5\times5\times5\times5)) = -(-625)$	625
$-(-5)^4$	$-((-5)\times(-5)\times(-5)\times(-5)) = -(625)$	-625

Rules:

1. If an exponent is attached to a negative number, but there are NO brackets, then the exponent does NOT apply to the negative sign!

-8^3

ANSWER WILL ALWAYS BE -ve

2. If an exponent is attached to a negative number, but there ARE brackets, then the exponent does apply to the negative sign!

$(-9)^4$

   a. If the exponent is Even, then the answer will be +ve (positive)

   b. If the exponent is Odd, then the answer will be -ve (negative)

Calculator buttons:

y^x x^y $\wedge$ $x^{\square}$

Homework: pg. 55 #4c, 5c, 7adf, 8ab 9ade, 12aef, 13bdef, 14deij, 16ade, 20bce