YEAR 8 HIGHER

TOPIC 2– *Working with Powers*

What do I need to know;

1. *Understand the meaning of an identity*
2. *Simplify exptression including powers and brackets*
3. *Use index laws in algebraic calculations and expressions*
4. *Factorise and algebraic expression*
5. *Construct and solve equations*

Equation or Identity ?

An identity is an equation that is always true regardless of which values are substituted eg **2y + 3y = 5y** (regardless of the value of y)

Substitution-*Find the value of 5c + 2 if c = 6*

$5 \times c + 2$ $5 \times 6 + 2 = 32$

Forming & Solving Equation s

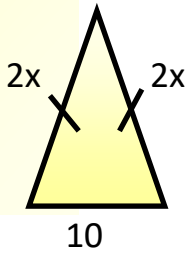
1) Find an expression for the perimeter of the triangle in terms of *x*

2x + 2x + 10 → *p = 4x + 10*

2) If the perimeter is 34 what is the value of x

34 - 10 =24 24 ÷ 4= 6

x= 6



Expanding Brackets

$3(f + 7) + 6(f - 2)$

Multiply what's outside brackets by what's inside brackets

3 x f = 3f 3 x +7= +21

3f + 21

+

Same here...

6 x f = 6f 6 x –2 = -12

6f—12

9f + 9

Factorising—

PUT BACK INTO BRACKETS

$18x^2 - 24x$

FIND THE HCF...THIS SITS ON THE OUTSIDE..

HCF is 6*x*

6*x* (3x

What can be multiplied by 6x to = $18x^2$

6*x* (3x - 4)

What can be multiplied by 6x to= -24x

REMEMBER YOU CAN CHECK YOUR ANSWER BY EXPANDING

Simplify Expressions

5a + 2b - 3c + 2a - 2b - 2c

5a + 2a +2b-2b -3c –2c

7a—5c

Simplifying with powers

$\frac{16x^8}{4x^2}$ $16x \div 4x = 4x$ $8-2 = 6$ → $4x^6$

$\frac{8a^6 \times 2a^3}{4a^3}$ $8a^6 \times 2a^3 = 16a^9$ $16a^9 \div 4a^3$ $4a^6$