FMPC10

EXPONENTS

- → Identify the base in each exponential expression.
- → Simplify each expression using the laws of exponents.
- → Evaluate where possible.

For all expressions the following is true: Every variable stands for a real number and none of the variables is equal to zero.

LEVEL 1

Expression	Base	Simplified Expression	Evaluated Expression
$a^4 \times a^5$			
$2^7 \div 2^4$			
$\frac{x^{10}}{x^3}$			
$(y^3)^0$			
240^1			
$(-1)^4$			

LEVEL 2

Expression	Base	Simplified Expression	Evaluated Expression
$a^2 \times a^3 \times a$			
$3^2 \div 3^{-4}$			
$\frac{2a^{10}}{14\,a^8}$			
$\left[\left(5^4\right)^2\right]^3$			
$\left(\frac{3}{2}\right)^{-2}$			
-3^3			

LEVEL 3

Expression	Base	Simplified Expression	Evaluated Expression
$\mathbf{2(a^2)(a^3)(a^3)^{-1}}$			
$\mathbf{6x^2 \div (2x^3)^{-4}}$			
$\mathbf{\dfrac{-24a^3b^8}{12\,ab^7}}$			
$\mathbf{\left[\left(4x^3\right)^{-2}\right]^4}$			
$\mathbf{\left(\dfrac{5ac^{-3}}{30a^5bc^4}\right)^{-2}}$			

$-100\,000^{0}$			

LEVEL 4

Expression	Base	Simplified Expression	Evaluated Expression
$-4(-a^{2})(a^{-3})(a^{3})^{-5}$			
$[8x^{2} \div (4x^{3})^{-1}]^{2}$			
$\left[\dfrac{-4a^{-5}p^{-7}}{12\ aa^{3}p^{-2}}\right]^{-2}$			
$-\left[6\left(-3a^{5}\right)^{9}\right]^{2}$			

$\left(\frac{25x^{-5}yz^{-3}}{40x^{2}y^{6}z^{-4}}\right)^{-2}$			
$\left[-\left(-3\,000^{0}\right)^{4}\right]^{5}$			