FPC 10

1.2 –The Zero & the Negative Exponent

Recognize the pattern to complete the following tables:

Power	Value
2^5	
2^4	
2^3	
2^2	
2^1	
2^0	
2^{-1}	
2^{-2}	

Power	Value
5^5	
5^4	
5^3	
5^2	
5^1	
5^0	
5^{-1}	
5^{-2}	

Power	Value
10^5	
10^4	
10^3	
10^2	
10^1	
10^0	
10^{-1}	
10^{-2}	

Power	Value
$(-2)^5$	
$(-2)^4$	
$(-2)^3$	
$(-2)^2$	
$(-2)^1$	
$(-2)^0$	
$(-2)^{-1}$	
$(-2)^{-2}$	

Based on the patterns you observed above, **any BASE to the power of ZERO has a value of _____.**

Evaluate: a) $15^0 =$ b) $(-250)^0 =$ c) $(\textit{the neighbour's cat})^0 =$

d) $-4^0 =$ e) $-100^0 =$

Based on the patterns observed in the tables above, **any BASE to the power of a NEGATIVE INTEGER**, e.g. $(BASE)^{-n}$ can be written as:

Evaluate: a) $7^{-2} =$ b) $(-10)^{-3} =$

c) $-10^{-3} =$ d) $\left(\frac{1}{5}\right)^{-2} =$

e) $-\left(\frac{1}{6}\right)^{-2} =$ f) $\frac{1}{4^{-2}} =$