

POLYNOMIAL

$$OUTPUT = G2 * GainInput^2 + G1 * GainInput + G0$$

GainModel	Order	GainShape	Direction	Asymtote	Slope	OUTPUT
0 Polynomial	2	0 Flat	0 Down			<p>Polynomial, 2nd, flat, down</p>
0 Polynomial	2	0 Flat	1 Up			<p>Polynomial, 2nd, flat, up</p>
0 Polynomial	2	1 Swing	0 Down			<p>Polynomial, 2nd, swing, down</p>
0 Polynomial	2	1 Swing	1 Up			<p>Polynomial, 2nd, swing, up</p>

GainModel	Order	GainShape	Direction	Asymtote	Slope	OUTPUT
0 Polynomial	2	2 Asymtote	0 Down	20%		<p>Polynomial, 2nd, asymptote 20%, down</p>
0 Polynomial	2	2 Asymtote	1 Up	60%		<p>Polynomial, 2nd, asymptote 60%, up</p>
0 Polynomial	1		0 Down			<p>Polynomial, 1st, down</p>
0 Polynomial	1		1 Up			<p>Polynomial, 1st, up</p>

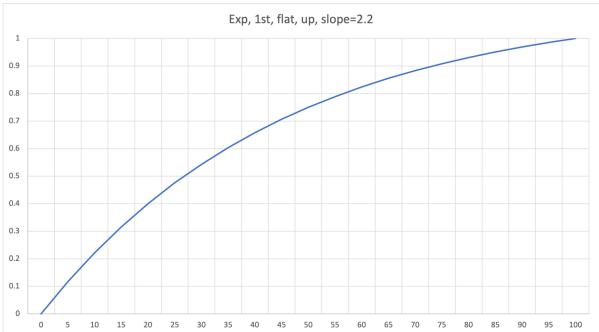
EXPONENTIAL

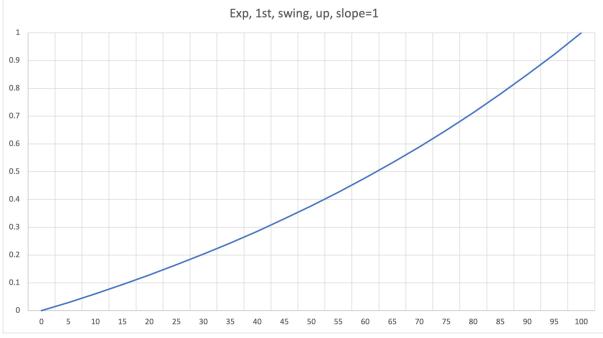
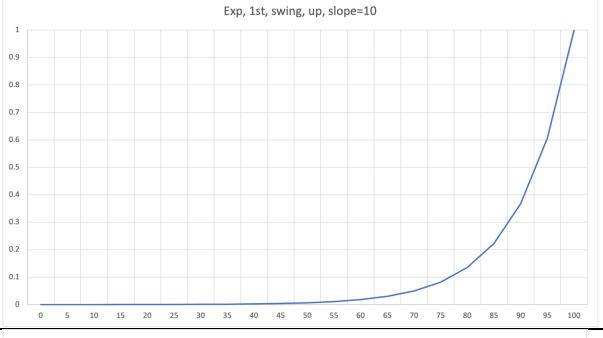
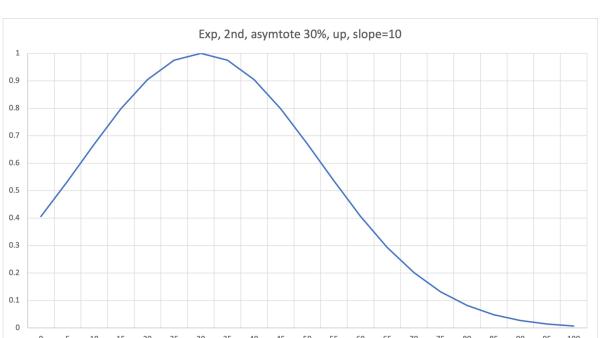
$$ExpNumerator == \exp(Slope * SlopeSign * (GainInput - GainAsymtote)^{Order}) - 1$$

$$ExpDenominator = \exp(Slope * SlopeSign) - 1$$

$$ExpFraction = \frac{ExpNumerator}{ExpDenominator}$$

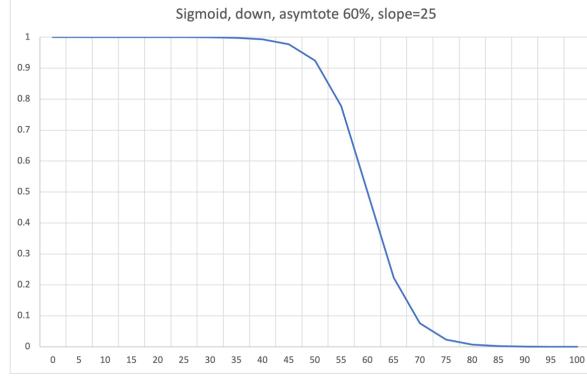
$$OUTPUT = GainDirection - (2 * GainDirection - 1) * ExpFraction$$

GainModel	Order	GainShape	Direction	Asymtote	Slope	OUTPUT
1 Exponential	1	0 Flat	0 Down		2.2	 <p>Exp, 1st, flat, down, slope=2.2</p>
1 Exponential	1	0 Flat	1 Up		2.2	 <p>Exp, 1st, flat, up, slope=2.2</p>
1 Exponential	1	1 Swing	0 Down		1	 <p>Exp, 1st, swing, down, slope=1</p>

GainModel	Order	GainShape	Direction	Asymtote	Slope	OUTPUT
1 Exponential	1	1 Swing	1 Up		1	<p>Exp, 1st, swing, up, slope=1</p> 
1 Exponential	1	1 Swing	1 Up		10	<p>Exp, 1st, swing, up, slope=10</p> 
1 Exponential	2		0 Down	75%	50	<p>Exp, 2nd, asymptote 75%, down, slope=50</p> 
1 Exponential	2		1 Up	25%	10	<p>Exp, 2nd, asymptote 30%, up, slope=10</p> 

SIGMOID

$$OUTPUT = 1 - \left[Direction - \frac{2 * Direction - 1}{1 + e^{-1 * Slope * (GainInput - GainAsymtote)}} \right]$$

GainModel	Order	GainShape	Direction	Asymtote	Slope	OUTPUT
2 Sigmoid			0 Down	60%	25	<p style="text-align: center;">Sigmoid, down, asymptote 60%, slope=25</p> 
2 Sigmoid			1 Up	25%	10	<p style="text-align: center;">Sigmoid, up, asymptote 25%, slope=10</p> 